International harmonization and statistical comparability

The analysis of economic and social phenomena essentially relies on the availability of statistical data that are comparable in time and space. I will not dwell on the need for time comparability, except to recall two developments that show the difficulty of meeting that goal: the recent reform of the methods for computing the United States national accounts by volume, and the lively debate in the U.S. over the construction of price and productivity indexes. If national statisticians have trouble guaranteeing the stability of their indicators’ significance over time, this will obviously make it harder to achieve the comparability of these indicators between countries.

The availability of comparable national statistical data supposes an international harmonization effort. Such a program is all the more valuable as economies open up to trade.

For example, the French business cycle is increasingly in step with the European cycle owing to the growth of trade, the complete liberalization of capital movements, and the general tendency to introduce competition in sectors formerly regulated on a national basis. Indeed, the absolute gap between real annual GDP growth in France and in the European Union has never exceeded 0.8 points in the past decade—despite the fact that the European economy underwent a major asymmetrical shock in that period as a result of German unification. Previously, the gap often exceeded one point.

It is no longer possible for a French economic analyst to construct a scenario without using comparable data on the main European countries and aggregated data on Europe as a whole. Likewise, French companies are no longer satisfied with French market data; they want access to equivalent data on the entire European market. There is probably no need for further examples of this kind, since I assume a Canadian audience is already convinced on this issue.

In the next section, I would like to emphasize some aspects of the statistical harmonization processes.

Two levels of harmonization

The main economic statistics, notably the national accounts and the balance of payments, are the result of a cumbersome process of gathering, processing, comparing, and aggregating basic data. This process is too complex, the statistical sources too varied, and the set of basic economic units too diverse to allow an easy assessment by statisticians of the precision or even the significance of the results obtained. National statisticians thus have every reason to share their experiences. This exchange is obviously facilitated by the use of harmonized concepts and classifications.

Trade and balance-of-payments statistics are a classic but still topical example. When the global sum of current-account balances was found to be negative whereas it should be null, the assumption was that the estimation of national current-account balances suffered from a downward bias. This finding gave national statisticians valuable clues for interpreting the discrepancy—a frequent occurrence in national statistics—between the current-account balance estimated from statistical sources compiled on a transactions basis and the current-account balance estimated from sources compiled on a settlements basis.

Within the European Union, the statistical observation of trade was profoundly transformed by the abolition of border formalities on January 1, 1993. The national data produced by the new statistical system are inconsistent. Total national exports to other EU countries exceed the imports from other EU countries by 4-5% instead of equaling them, as one would expect. Moreover, the discrepancy seems to be widening. North American statisticians are familiar with this type of problem between Canada and the U.S., except that the inconsistency there is reversed—which means one can assume that exports are underestimated.

To sum up, the first level of international harmonization concerns definitions, concepts, and classifications. While necessary for the production of comparable statistics, harmonization at this level is often insufficient for attaining the desired degree of comparability—as our trade-statistics example shows. To borrow the distinction introduced by Seltzer, we therefore need to...
consider a second level of harmonization. This second level covers methods for gathering, processing, and aggregating data, as well as data interpretation and analysis.

Harmonization is an investment
Harmonization is not an absolute ideal, however. We know from experience that every harmonization program entails a fairly heavy investment, whose cost is carried by international organizations and, even more so, by national statistics offices. The implementation of the program can actually degrade the quality of a national statistic during a transition period. A further difficulty arises from the constraints on the basic national statistical sources due to the specific characteristics of national institutions and legislation: two examples are the systems of enterprise accounts and social-insurance legislation. It would be foolish or presumptuous to believe that these obstacles to harmonization can be overcome.

A harmonization program is comparable to a public investment with a fiscal cost and expected pay-offs. These are hard to assess and are spread over time. Moreover, the size of the pay-offs is partly determined by a club effect. The pay-off expected by a country that is considering a harmonization program is lessened by the uncertainty over the scale of the harmonization programs that other countries may be willing to undertake. Economic theory teaches us that, in such a situation, a minimum contractual arrangement coupled with reciprocal monitoring and a sharing of the investment is consistent with the general interest.

After these general comments, I would like to address more specific issues via an examination of European statistics.

The heterogeneity of statistical systems
The major harmonization effort carried out by the European Union offers many valuable lessons. This does not mean, however, that the European experience can always be copied successfully elsewhere: the program has been supported by an institutional and legal framework as well as by resources—via Eurostat—that bear no comparison with the existing or potential resources in larger international groupings.

The European experience is nevertheless highly instructive, if only because the national statistical systems of the fifteen EU Member States were and still are very diverse. For example, the French statistical system is closer in its organization and methods to Statistics Canada than to the German system. The Scandinavian countries’ statistical offices are very distinctive, and differ altogether from those of southern European countries. In fact, European integration has highlighted the diversity of national traditions and shown that statistical harmonization will be a longer and harder process than had been imagined.

The European experience has underscored the limits of the first level of harmonization, which concerns definitions, concepts, and classifications. This level is an unquestionably vital foundation, but provides less comparability than expected. This is particularly true for statistical estimations made from sources that are potentially diverse and, in any event, variable from country to country.

The benefits of regulatory constraints
European statisticians have had to develop a second level of harmonization, which bears on statistical sources and methods for gathering and processing data. I gave the example of trade statistics, but the entire national accounting system is concerned, as are enterprise statistics.

As accountants know all too well, any system of definitions and classifications inevitably leaves a significant margin for interpretation. The EU national statistics offices were forced to subscribe to a common obligation to explain their practices and submit them for approval by Eurostat. This discipline was needed to achieve the degree of comparability required in view of the key role now played by national-accounting estimates in European affairs.

More generally, the production of statistical data used to establish the national accounts—and in particular the data gathered from enterprises—was found to be fairly heterogeneous in Europe, as regards data types and coverage. The harmonization process set in motion by this finding has turned out to be slow and difficult.

For example, one of the goals of European statisticians is to ensure that all EU countries can produce the main structural statistics on enterprises in a reasonably comprehensive manner. Several regulations have been adopted for this purpose, in particular a regulation requiring all Member States to draw up business registers for statistical purposes. Germany objected to the principle of such a regulation and appealed unsuccessfully against the regulation to the European Communities Court of Justice.

I have chosen this example to underscore (i) the commitment of European statisticians to the second level of harmonization and (ii) the

4. In EU institutional terminology, «European regulation» denotes an act that is legally binding on each Member State.
The need to harmonize enterprise statistics

I would like to examine in greater depth an issue mentioned earlier: enterprise statistics and the methods used to process them for the production of the national accounts. My intention is not to minimize the importance of other data—for example, social statistics or sectoral statistics—but I want to voice my concern over this issue for several reasons:

- Gathering information from enterprises is the area where statisticians encounter the greatest technical difficulties, at least in France.

- Enterprise statistics is also the area where the process of European cooperation and harmonization faces the greatest technical and political difficulties—so much so that the results, unfortunately, may well be more modest than we expected.

Three lessons from the European experience

We can draw some lessons from the European experience and use them to define guidelines for answering the questions that are put to us:

- We are a long way from completing our task in those areas where statistical comparability and harmonization can and should be sought.

- We must recognize the limits of first-level harmonization and collectively promote second-level harmonization when it seems desirable.

- Second-level harmonization is intrinsically difficult. To make progress here, we need to act through multiple channels: regional organizations (EU, NAFTA, Latin America, etc.), international organizations, particularly for sectoral issues (IMF, BIS, ILO, OECD), and more informal cooperation through groups with flexible membership such as the Voorburg Group and the Siena Group.

I will not attempt an exhaustive listing of the areas where it seems desirable to improve the comparability of our statistics and the harmonization of our methods.
(admittedly, there has been progress on common classifications of products and activities, which is of course necessary and far from negligible).

- The globalization of markets and business operations is increasing the need for aggregate statistics on wider markets than national markets, hence for greater statistical harmonization.

- This same globalization complicates the work of national statisticians and carries the implicit risk of a deterioration in the quality and significance of national statistics.

- The spread of market competition to new sectors as well as its intensification is accompanied by a diversification of products, services, and trade practices. As a result, prices become more complex to measure. This raises questions about the international significance and comparability of the separation between price movements and volume movements by national statisticians.

Informal international cooperation

In view of the problems encountered in this area by the EU’s formal harmonization process, it seems unlikely that an international organization would be able to deal with the issue—at least in the short term. The most efficient solution, therefore, would be to promote an informal international cooperation. The simplest answer would be to set up a task force along the lines of the Voorburg Group or even to use the Group itself as a forum: after all, its discussions—though confined to the service sector—already center on enterprise statistics.

I will not attempt to suggest a full list of topics that such a group might address. Let me simply take one subject as an example: the accounting information produced by enterprises. True, it is not the most urgent topic, but in my view it is a good illustration of a desirable area of cooperation.

Every national statistics institute has tried—with varying degrees of success, depending on the local context—to use accounting data produced by enterprises. For this purpose, the institutes have sought to influence the changes in accounting standards in order to make sure that these do not ignore the production of accounting data of general interest. French statisticians have been fairly successful in this respect with regard to enterprise accounts thanks to what we call the «Plan Comptable»—a standard chart of accounts. By contrast, but like their colleagues in most other countries, French statisticians are unable to use the consolidated accounts of enterprise groups. This situation is potentially dangerous because groups might give priority to their consolidated financial statements and downplay the significance of their subsidiaries’ accounts. French statisticians were hoping that their approach would be copied internationally, beginning with the EU. Indeed, Europe did make substantial progress in this direction in the late 1970s and early 1980s, with tangible results for enterprise accounts.

But the globalization of financial markets and the legitimate desire of the leading European corporations to be listed on the world’s main financial markets has had a different effect: the guidelines produced by the International Accounting Standards Committee (IASC), backed by the International Organization of Securities Commissions (IOSCO), are becoming the reference standards for the consolidated accounts of large enterprise groups. Unfortunately, to the best of my knowledge, statisticians have not analyzed the consequences of these changes. Nor have they made arrangements to establish a dialogue with IASC in order to see whether the Committee standards could be adapted to take into account the need for general economic information.

In conclusion, I have tried to put the spotlight on certain issues in order to share two of my basic beliefs with you: first, that international statistical harmonization and cooperation are still topical; second, that their success is one of the prerequisites for relevant, high-quality national statistics.

Paul Champsaur
Director-General, INSEE
As in other countries, the healthcare sector in France is undergoing profound change. The pressure to rationalize the system is coming from financial constraints and the steady growth in healthcare spending as a share of the nation's output—today, nearly 10% of GDP. Public health has become a prominent issue because citizens and officials are concerned about the quality of care and about medical safety. The development of medical processes and technologies—as well as their rising cost—is providing an incentive for a much closer scrutiny of their therapeutic effectiveness. With its 1.5 million employees, of whom almost one million work in hospitals, healthcare is a socially sensitive sector. In many French cities, the hospital is the largest employer. Concern over social equity and optimal resource allocation has led analysts to take a closer look at the disparities in the geographic distribution of supply and expenditure. The rising incidence of social exclusion and its impact on healthcare are prompting a reexamination of healthcare access conditions and of the ways to provide medical insurance to the excluded. In short, while healthcare has always been a major preoccupation for every one of us, the sector has now become a key issue in public policy.

Statistical work is not one of the areas most affected by the present changes, but these will have a significant impact on the future of health statistics. The planned reforms comprise a substantial package of measures concerning the sickness-insurance information systems. Improvements in the systems will allow decisive progress in the compilation of health statistics. These advances are also linked to the shifts in attitudes among sector players. In 1989, the National Council for Statistical Information (Conseil National de l'Information Statistique: CNIS) published a scenario on statistical information in the year 2000. The study classified healthcare as one of the fields in which statistical knowledge exhibited major gaps but in which no improvement would be possible unless the sector participants adopted new attitudes to statistics. The changes under way suggest that this message has been heard. In the debates on the principles and methods of healthcare regulation, quantitative information is coming to be viewed as a core value—in contrast with conventional approaches, which are far more qualitative if not actually subjective. This is a decisive opportunity for statisticians, but also a test in which the quantitative approach will be judged on its results.
We begin our coverage with SESI, the statistical office of the French Health Ministry. SESI is specifically in charge of supplying data to ministry directorates. In addition to conducting its own statistical surveys and operations, SESI is responsible for ensuring the system’s overall consistency; it also seeks to promote changes in the information sources that will improve the informational and analytical tools common to the entire health sector. In his article, Patrice Hernu reviews the main types of information and sources available. He describes SESI’s role in this field, and emphasizes the consequences for statisticians of the changes in management information systems.

Two points need emphasizing here. The first is the increase in the medical content of management information. The progressive numerical coding of items of service and reported illnesses will enable management systems in hospitals—followed by those of sickness-insurance funds—to offer analytical tools vastly superior to the raw accounting data available today. Areas covered will include the ways in which users access the healthcare system, the activities of healthcare professionals, and—indirectly—the population’s health status.

The second important point is the emergence of a full-fledged information system. The healthcare sector is fragmented into a multitude of individual and institutional producers, who provide a broad and weakly standardized range of items of service. Another characteristic is that the sector runs on market principles but without the regulatory influence of the «invisible hand»; this is due to (1) its financing by society as a whole via the social-security agencies and mutual insurance funds, and (2) the asymmetry of information between producers, consumers, and—to a certain extent, perhaps—the payers as well. To analyze and understand this somewhat particular market, we need to collate information from different sources. This cannot be done without investing heavily in the tools needed to develop a coherent system. The investment needs to focus on three areas: (1) classifications and concepts, particularly those concerning items of service and illnesses; (2) reference lists and instruments for providing identification and data security: directories and smart cards issued to the insured (SESAM-Vitale) and to healthcare professionals (Carte de Professionnel de Santé: CPS); (3) the use of new information technologies such as electronic transfer of doctor-supplied refund forms via an intranet linking healthcare providers and sickness-insurance funds.

1. For the sake of convenience and to avoid confusing the English-speaking reader, we will use the term «Health Ministry» throughout this section to refer to the French government department in charge of health. Over the years, there have been frequent changes in the organization and name of the ministry, currently (1998) known as Ministère de l’Emploi et de la Solidarité (Ministry of Employment and Solidarity).
The second leading player is the sickness-insurance system, particularly the Caisse Nationale de l’Assurance Maladie des Travailleurs Salariés (CNAMTS), which coordinates the units of the general system for wage- and salary-earners. The sickness-insurance funds are in charge of implementing the main changes described above, particularly those revolving around the SESAM-Vitale cooperation project. The funds are also the main source of individual information, especially via their processing of refund forms. These documents can be used to track consumption and expenditures, as well as practitioners’ activity.

The third key player, INSEE, conducts the large-scale population surveys. Pierre Mormiche describes the main lessons of the most important operation for our purposes: the Ten-Year Health Survey, conducted in partnership with CREDES, SESI, and the Health Ministry’s Research Unit (Mission de Recherche: MIRE). The survey includes subjective questions in which respondents are asked to assess their own health and to report their healthcare consumption over a three-month period. This comprehensive approach provides material for analyzing the health status of the French population. The survey gives crucial data on factors influencing medical consumption, such as age, sex, and social-insurance coverage. A common core of questions available since 1960 allows comparisons over time, on such topics as the changes in life expectancy for people without disabilities. A highly valuable source, the survey is exploited by many users and research teams, in particular those funded by MIRE. In addition to the ten-year survey, INSEE carries out healthcare research studies and international joint projects, described in the articles by Pascale Genier and Frédéric Rupprecht.

Discussion of the fourth key player, INSERM, is confined in this issue to one of its main statistical products, the analysis of medical causes of death: this is the only «ex post» source on the health status of the French population available at a detailed geographic level. Benoît Riandey describes another facet of the statistical methods developed by INSERM: the «Sentinelle» networks, through which the Institute monitors nationwide patterns for selected common diseases.

Apart from the examples just mentioned, INSERM scientists apply statistical methods very frequently, but to epidemiological studies of a different nature from the articles typically published in Courrier des Statistiques. The INSERM

2. See abbreviation table p. 12.
studies are based on analyses of narrow cohorts or samples. Their goal is not statistical representativeness, but the examination of correlations between phenomena, for example between individual behaviors and the incidence of particular diseases. However, the studies often provide a wealth of lessons for all statisticians.

The fifth leading player is CREDES (Centre de Recherches, d’Études et de Documentation en Économie de la Santé), a public-funded research and analysis unit specialized in health issues. The Center developed the ten-year health survey mentioned above. A pioneer in many fields—particularly healthcare economics—CREDES conducts a broad range of small-scale surveys of its own. These strengths make it one of France’s most respected centers of expertise in the health sector.

In addition to these five key organizations—SESI, CNAMTS, INSEE, INSERM, and CREDES—many other producers help to compile and disseminate healthcare statistics. The Regional Healthcare Monitoring Units (Observatoires Régionaux de Santé: ORSs), a more recent creation, issue summary indicators at regular intervals and participate in regional healthcare conferences. The National Public Health Network (Réseau National de Santé Publique: RNSP), which is to become the Healthcare Watch Institute (Institut de la Veille Sanitaire: IVS), has been developing a system to monitor the main diseases. The French Medical Evaluation Agency (Agence du Médicament) is also setting up its statistical system. The newly established National Agency for Healthcare Accreditation and Assessment (Agence Nationale d’Accréditation et d’Évaluation en Santé: ANAES) will improve our knowledge of healthcare quality.

This brief and partial list shows the resources and potential of French healthcare statistics, but also the constant risk of fragmentation—hence the importance of an information system shared by all participants and the need to promote consistency in statistical initiatives and products. As the raw information is often scattered, it needs to be edited and summarized.

One of the essential tools for statistical summarizing is the healthcare account, one of the satellite accounts around the central framework of French national accounts. The healthcare account correlates the financial data on changing expenditure patterns—mainly supplied by the sickness-insurance funds—with physical data on the activity of the healthcare system, largely drawn from the SESI surveys. The account provides a closely watched annual indicator of the healthcare sector.

As regards data on the nation’s health status, the main body in
charge of compiling summary statistics is now the High Committee on Public Health (Haut Comité de Santé Publique), which submits an annual report to the National Health Conference. Given its limited resources, the High Committee relies on the services of INSERM, SESI, and the Directorate General for Healthcare (Direction Générale de la Santé: DGS) for the preparation of its report.

The French healthcare system—and its strengths and weaknesses—should be viewed against the statistical arrangements of similar countries. As it happens, international comparative studies have multiplied considerably in recent years. For several decades now, the World Health Organization (WHO) has been tracking the main diseases and publishing indicators on health conditions in individual countries. The OECD and the European Union also compile data bases. As with all international comparisons, there is an obvious difficulty in gathering information. A possibly even greater challenge is to ensure statistical comparability. That is especially true when examining the organization of healthcare systems, their medical and economic efficiency, and the role of each category of players. Studies need to go beyond the comparison of quantitative data to explore the social systems described by the data, as well as the conditions in which the data are produced.

There are many research studies in progress in France on these topics. The SESI journal, Solidarité Santé, carries regular features on this subject. MIRE conducts research programs in the area. Frédéric Rupprecht’s article in the present issue describes an international conference on healthcare systems held in 1996 in Barcelona, which recapped the changes under way in several countries.

Michel Villac
Director of SESI
Ministry of Employment and Solidarity

Information systems on French health and medical care will experience rapid change, as Patrice Hernu emphasizes in his article. The driving force behind this movement is the key role that the systems will play in the implementation of reforms aimed at controlling healthcare spending; correlatively, the information systems are crucial to the reforms concerning the organization of healthcare supply and funding. The public-service missions performed by the statistical system are thus closely linked to the satisfaction of healthcare-system participants' information requirements. These needs are highly diverse, which raises the risk of information fragmentation. The existing arrangements lack coherence. There is a powerful temptation to add new strata as the needs multiply. Statisticians' efforts are therefore entirely focused on improving the circulation between all the information-system modules so as to make the system more efficient. In the second half of the article, the author focuses on the centerpiece of the French public system of health statistics: the Health Ministry’s Office of Statistics, Research, and Information Systems (Service des Statistiques, des Études et des Systèmes d’Information: SESI).

A report on “Health information in France” by the High Committee for Public Health (Haut Comité de Santé Publique: HCSP) classifies information into three broad subject areas: (1) health status, (2) the use of the healthcare system and of system benefits, (3) system resources and output. Because of the differences in the potential scope for data-gathering, the statistics on public health do not provide identical coverage of the three areas.

Three broad categories of information

- Information on the population’s health status

One important sub-category to distinguish here is observational data, which track medium- and long-term health phenomena. The data relate to the components and determinants of health status.

Paradoxically, descriptions of population health status have long relied on mortality statistics. France has full data series—going back more than a century—on the causes of death. But health status cannot be determined exclusively from the enumeration of diseases that are serious enough to cause death. We also need to know about morbid (i.e., not necessarily fatal) phenomena. These, too, comprise distinct sub-groups: (1) diseases, such as multiple sclerosis, which are medically diagnosed and constituted conditions; (2) illnesses, such as rheumatism, which are subjectively experienced by patients; (3) sicknesses, such as stomach cramps, which are identified as a set of symptoms. Data are also needed on handicaps and their component elements, namely: bodily disability (ex. deafness, amputation) and impediments (ex. inability to hear or move owing to a lack of prosthetic devices). Lastly, some health conditions in the broad sense may comprise environmental or societal factors.

The time element of morbid phenomena must also be taken into consideration: the concepts of incidence (number of new phenomena in a given period) and prevalence (number of cases observed at a given date) are central to the assessment of conditions that may be temporary (such as influenza) or persistent (such as chronic ailments). Taking into account the time dimension of health-related episodes does, however, pose problems for the statistician: the rules of confidentiality and privacy rules are stricter in a field where the intimate life of individuals is at stake. Hence the difficulty of identifying the phenomena and thus of establishing links over time.

The determinants of health status are the factors that can influence people’s health. Their effects can be felt at the individual or collective level. The factors may therefore be specifically related to individual behavior (such as tobacco or alcohol consumption); or they may be social, non-specific factors linked to general living conditions (environmental factors such as pollution; socio-economic factors, etc.).
distinction between the determinant and the health status is as hard to make as the separation between the pathological condition and the symptom—a difficulty evidenced by the debates over classifications.

Monitoring data are gathered for the specific purpose of issuing alerts and taking action. These data mostly concern communicable diseases and environmental hazards. A special category of monitoring consists of watch programs, which seek to detect the potential toxicity or dangers of therapeutic products, and, subsequently, to monitor their unexpected or undesirable side effects. Blood and pharmaceuticals are two examples of products covered by watch programs.

- Information on the use of the healthcare and benefits system

Such information concerns the contacts between individuals and the care system or benefits system. Data on this subject are generally collected in the following ways:

- Direct questioning of households in consumption surveys. One example is the Ten-Year Survey of health and healthcare consumption, conducted on an effective sample of about 7,000 households (20,000 individuals) with the participation of INSERM, INSEE, CREDES, SESI, and INSERM.¹

- Gathering data on patients from healthcare institutions or providers. One example is the data from the Program to Enhance the Medical Content of Information Systems (Programme de Médicalisation des Systèmes d’Information: PMSI) for healthcare institutions, whose purpose is to collect information on the medical activity generated by each stay. The PMSI enables patients to be classified in medically, financially, and technically homogeneous groups. This makes it possible to measure the hospital’s “real” activity and take it into account in hospital-funding procedures.

- Retrieving the items needed for managing the benefits granted to healthcare-system customers such as disability benefits, occupational injury benefits, and so on. For the most part, these data are held—and therefore managed—by the sickness-insurance funds (Caisses d’Assurance Maladie). Until now, the funds’ terms of reference did not include the management of data for purposes directly related to cash disbursements. In fact, this information system in its current state is unsuitable for statistical use.

- Information on system resources and output

This category of information describes:

- the material and human resources implemented in the system: practitioners, institutions, medical facilities, etc.;

- the resulting output: items of service performed, days of care, drugs sold, etc.;

- financial resources.

**Extreme diversity of information sources**

The information is obtained by a variety of means and generated by numerous producers. As a result, it comes in many different forms. Moreover, it is edited and processed by different organizations that have not always harmonized their methods. The reason is that statistical concerns have not always been taken into consideration at the outset.

The fullest data records concern health status. INSERM manages the comprehensive statistics on medical causes of death. This coverage is of good quality, despite some gaps in tracking recent phenomena such as deaths caused by drug abuse. The INSERM unit is coordinated by a scientific committee of which INSEE and SESI are members. The unit is revamping this comprehensive base by the full “in clear” capture of the principal and secondary causes of death. Automatic recognition methods will broaden the scope of coverage, improve compatibility, and promote progress in classification. Some specific conditions such as infectious diseases must also be reported by law to the Health Ministry’s Directorate General for Healthcare (Direction Générale de la Santé: DGS). The National Public Health Network (Réseau National de Santé Publique: RNSP) coordinates the data made available through these channels. The registers tabulate all cases of specific conditions (ex. cancer, malformations) recorded in strictly defined geographic entities. A national registers committee is attempting to introduce some consistency into these data-gathering operations, most of which—by definition—are locally initiated. The greater the consistency achieved, the more general the conclusions we will be able to draw from these records.

Another category of statistical documents is, by contrast, governed by official regulations: the so-called “resource registers” (répertoires). They meet the statutory obligation of the Prefect² to keep an up-to-date census of local healthcare and medical/welfare institutions and health-services personnel. These registers are therefore essentially managed by central-government bodies. The most widely used are ADELI and FINESS, which are administered by SESI.

- ADELI initially stood for “Automatisation des Listes” (List Automation). It is a register of regulated professions: medical practitioners, pharmacists, and paramedics, i.e., for the most part, nurses and physical therapists. It is

¹. See the article by Pierre Mormiche in this issue.
². The representative of the central government in the département, a territorial unit of administration.
SESI and healthcare information systems

continuously updated at the département level. SESI has begun renovating ADÉLI in cooperation with most healthcare system participants. The aim is to make ADÉLI the single, partner-oriented reference tool for both professional and statistical purposes. A debate is under way about extending the register to all the health and social-work professions. There is one critical issue at stake: initially, the ADÉLI data base is intended as the foundation for the Healthcare Professionals Card (Carte des Professionnels de Santé: CPS). The CPS is to be used in combination with the healthcare smart card issued to patients (SESAM-Vitale), as set out in the new regulations on healthcare and hospitals. There are three major aims: (1) to eliminate the paper forms (feuilles de soins) that patients presently have to fill with their sickness-insurance fund to obtain refunds; (2) to facilitate the testing of healthcare procedures and networks; (3) to promote the computerization of doctors’ offices and medical institutions. This should allow the gradual convergence of healthcare supply and demand data—and thus increase the capacity of the statistical system to meet the needs of system participants.

- FINESS (Fichier National des Équipements Sanitaires et Sociaux), the national data base on healthcare and welfare facilities, enumerates the healthcare units that are authorized to install resources (beds, accommodation, heavy equipment) or to set up healthcare services. FINESS describes the facilities and lists the medical/welfare and welfare-only units. It is continuously updated and can be accessed and analyzed in real time. SESI designed the database along the same lines as the national business register (SIRENE), with which FINESS is coordinated. Accordingly, SESI introduced the features of a statistical register into a data base that was originally designed to store administrative authorizations. To promote the broadest possible partnership, SESI recommends that FINESS be used simultaneously as a reference for all professional applications and for launching supplementary statistical or administrative surveys.

Most statistical surveys on healthcare are conducted by SESI, INSEE, and CREDES. They cover the following populations:

- households: for example, the Ten-Year Health Survey, which focuses on health status, behavior, and consumption;
- healthcare producers: for example, the hospital morbidity surveys (by SESI) (box 1) or the surveys on private practitioners’ prescriptions (by CREDES), which gather information on patients (conditions, socio-demographic characteristics, and drug prescriptions issued) and on the behavior of healthcare producers.

The Annual Statistical Survey of Healthcare Institutions (Statistique Annuelle des Établissements de Santé: SAE), performed by SESI in cooperation with the national and regional units of the national sickness-insurance fund (respectively CNAM and CRAMs), are a case apart. This comprehensive operation focuses on the resources implemented by the health sector and on the sector’s output as measured by the activities of its institutions.

Sources not originally developed for statistical purposes

The claims-settlement system of the sickness-insurance organizations allows the insured to be reimbursed for their healthcare outlays. These transactions are a source of data on the activity of private-sector practitioners3 and on the volume of benefits provided to the insured and their dependents.4

Similarly, PMSI is intended as a tool for allocating financial resources, but the richness of the data—which includes conditions treated and items of service performed—raises the hope that it can be used for wide-ranging statistical purposes. For example, it may be possible to describe the conditions affecting institutional patients, or to track the shifting patterns in the items of service performed. Obviously, the combined use of data from administrative sources and data designed for statistical information purposes requires careful preparation.

There are some drawbacks in this multiplicity of data-gathering and data-processing procedures. It is hard to discern the actual capabilities of existing information systems and, most of all, their capacity to work together for information purposes. In fact, most of the existing statistical tools were introduced on an ad-hoc basis to meet new specific needs—and these needs, by nature, could not be continuously re-examined in a comprehensive manner. For the past several years, efforts have been made to review the situation and fill the gaps observed in the information system, such as: fields not covered, redundant but inconsistent coverage, and fields that are not linked but should be.

In the specific area of health institutions, the Commission on Health-Institution Information Systems (Commission des Systèmes d’Information des Établissements de Santé: CSIES) was set up in 1994 to replace a joint committee between the government and the sickness-insurance funds. CSIES aims to promote closer cooperation between the information systems of government agencies and those of the sickness-insurance funds. The focus on information systems lies in with a broader plan covering the information systems of all the ministries in charge of health

3. Via the National Query and Request System (Système National d’Interrogation et de Requêtes: SNIR).

Courrier des statistiques, English series no.4, 1998

15
Morbidity survey

The main purpose of the morbidity survey is to construct a national data base on patients of intensive-care units in public and private hospitals. By offering an overview of the health problems treated in hospitals, the base complements the information available on outpatient care from the INSEE-SESSI-CREDES Ten-Year Health Survey of 1991-92. The morbidity survey should also make it possible to interpret the expected findings from the PMSI bases in the broader context of short-term hospital stays (boxes 3 and 4). The socio-demographic information on hospital patients and the medical conditions treated will provide a national statistical reference framework for the Regional Healthcare Organization Plans (Schémas Régionaux d’Organisation Sanitaire: SROSs). The SROSs will serve as guidelines for the regional agencies announced under the plan enacted by the government of Prime Minister Alain Juppé in 1995-96. Areas covered by SROSs include hospital occupancy rates, treatment programs, the share of each institution in the total regional healthcare supply, and medium-term scenarios. The morbidity survey should also help in assessing the annual public expenditure on programs to deal with specific medical problems such as cancer, and with the health impact of alcoholism, smoking, etc.

Sample survey

- Statistical survey of a representative sample in metropolitan France (mainland + Corsica) of patients treated each year in short-stay care units; construction of a random sample of 70,000 patient files (some regions are preparing an extension of the survey to ensure its representativeness for their particular area).

- Individual operation, with a time limit:
  - 1-3 weeks of observation, depending on size of survey units in 1991 and/or 1992
  - No long-term obligation to gather data

- Information gathered in the most user-friendly form for respondents (for example, collection "in clear," with coding performed by external medical teams)

Protection of statistical confidentiality

- Survey with a mandatory official survey-approval stamp, indicating content is covered by statistical confidentiality rules

- Survey registered with National Committee on Information Technology and Civil Liberties (Commission Nationale Informatique et Libertés: CNIL): tear-off sticker on questionnaires designed to guarantee secrecy and protect medical confidentiality

Links with PMSI

- Common variables directly derived from the healthcare-institutions information system (diagnoses and items of service that are recorded using the same definitions and classifications)

Fields observed

- Patients hospitalized in intensive-care wards (regional hospitals, public hospitals, and private institutions)
- Categories of medical practice: medicine, surgery, obstetrics
- Treatment methods: full-time hospitalization, short-stay hospitalization (in both cases, discharged patients are given a questionnaire); day hospitalization, night hospitalization, home care, ambulatory care (in these cases, a questionnaire for patients who are "present")

Areas covered by main variables

- Patients’ socio-demographic characteristics: nationality, sex, date of birth, social-security coverage, employment, socio-occupational category
- Treatment procedures: type of specialist care provided by hospital, emergency care, admission procedure, discharge procedure
- Length of stay: admission and discharge dates
- Health problems treated: diagnoses, items of service (medical coding applied in cooperation with the team of Dr. Girardier of the Grenoble research hospital, who developed the PMSI code), outcome of childbirth
- Intensity of care provided: nurses’ diagnoses, quantification of nursing care

1. The following government, headed by Lionel Jospin, has decided to keep the regional agencies.
and social affairs. The plan defined a general context for CSIES’s work in the Health Ministry. The Commission’s findings were instructive. The main “information modules” were described by means of a standardized set of criteria. About fifty modules of this kind concerning health institutions are managed by the central-government units (in the Health Ministry: SESI, the Hospitals Directorate [Direction des Hôpitaux: DH], and the Directorate General for Healthcare [DGS]) and the sickness-insurance system. The first aim of this inventory of sources was to identify the redundancies between modules and to spot any deficiencies.

The inventory revealed the following:

1. The extreme diversity of the modules of the hospital information system, in terms of (a) their type (data base, survey, management system), (b) the extent of their coverage—ranging from very broad (all hospital stays for the PMSI) to very narrow (a specific medical condition), and (c) data-gathering frequency and ease of data access.

2. The large proportion of information produced without direct requests to the health institutions. In this case, the information is generated by (a) the claims-settlement departments of the sickness-insurance organizations, (b) personnel-management systems, or (c) budget data from external departments.

3. The weak convergence between the sickness-insurance modules and the central-government modules. The information systems of the sickness-insurance funds are designed for production tasks, and borrow their features from them. Processing operations are cumbersome, procedural, vertical, often comprehensive, and largely fed by data from claims-settlement procedures. By contrast, the modules developed by the central government are highly fragmented, and include data bases, miscellaneous surveys, panel confidence surveys, etc.

### Major challenges

Finding direct or indirect solutions to the current difficulties represents a major technical and political challenge.

### Giving a medical content to the information available

The effort to increase the medical content of the information available is a response to the criticisms often directed at health information systems. Our knowledge of the healthcare system’s customers and output—the critics argue—consists mainly of tabulations of the number of patients receiving care, the items of service performed, and the days spent in hospital. Apart from a few expensive studies, we rarely know who consumes what (in other words, which types of disease, condition, or dependence are treated with which types of hospitalization, complementary examinations, surgery, and drugs). It would also be interesting to know exactly when the consumption occurs: in the diagnostics phase, during an intensive care operation, for a consolidation treatment, etc.

The aim is therefore to arrive at a more specific enumeration of patients, health statuses, consumption, output, and resources. This strategy has been pursued for several years now thanks to PMSI. The introduction of coding for items of service and medical conditions in the private-practice sector (decree of May 6, 1995) has given considerable momentum to these efforts.

A more comprehensive coverage is essential for providing guidance to policy-makers and facilitating dialogue with healthcare professionals. It requires heavy investments in technical issues, of which two of the most important are: a consolidation of classifications to ensure consistency between the private healthcare system and the hospital system; the development of methods to protect "sensitive" data.

### Making fuller use of existing data

One of the findings of the HCSP report on health information is that "even if the information system is not as full or as satisfactory as one might wish, it is unquestionable that the information content is already far superior to the ways in which the information is used." The HCSP therefore recommends a greater development effort both in the conceptual sphere and in the strictly methodological field—for example, concerning extrapolation methods. It would also like to see initiatives aimed at making better use of the results obtained, so that they can be more easily available to decision-makers and healthcare professionals.

The “information system” approach is both a technical and a political means of addressing the need for better use of the data. As its name implies, an information system must inform. In other words, it must provide effective information on health-system activities by generating end-products that match the basic objectives. There are several criteria for assessing the quality of the end products, including: form and content of data tables; frequency of series compilation; level of detail of the aggregates; production times; simplicity and efficiency of indicators, etc. Most important, the information must constitute a genuine system. The properties of the data and information sub-sets (such as applications and files) must ensure the consistency, internal compatibility, and economy of the whole. It is not enough to collate—even using highly sophisticated methods—all the information obtained at the final stage of each application. The information modules need to work together smoothly well before the final stage.

Interworking requires:

- a far more rigorous definition of classification standards in the medical, occupational, geographic, and behavioral areas; these standards must apply to homogeneous groups;

- the definition of aggregation levels for the basic categories of data; this will allow the transfer and matching of data from different applications and files, on the basis of representativeness criteria that are clearly designed to fulfill the system's goals;

- a far more precise documentary and operational definition of the concepts and objects relating to the system dialogue, i.e., fields, variables, classifications, filters, limit values, and dates; the system dialogue is a function that goes beyond the objective of providing basic information;

- the definition of clear interfaces with data-production systems;

- the extension of integrated assessment and correction procedures.

The Health Ministry has committed itself to this approach by drafting a "ministry master plan for information systems" (Schéma Directeur Ministériel des Systèmes d'Information: SDMSI). The plan comprises a strategy chapter and an operations chapter. The technical issues cannot be isolated from the subsequent political issues. The plan—which the ministry views as essential to health statistics—was developed by a large task force co-managed by SESI and the Health Ministry's Sub-Directorate for Information and Telecommunication Systems (Systèmes d'Information et de Télécommunications du Ministère: SINTEL). The remaining step consists in carrying out the projects that have been designated as the most urgent. Two arrangements are under review, which should contribute to a harmonized development of the information systems. At the highest level, a "High Council for Information Systems" might advise the Minister directly on the choice of relevant methods and priorities. At an intermediate level, a "National Council on Health and Welfare Classifications" could play two useful roles by (1) centralizing the information about classifications used in the Ministry, and (2) recommending standards and rules on a progressive basis, along the lines of a master plan for urban development.

The need for regional and local information

Local decision-makers need accurate pictures of local data. Data-collection methods and costs sometimes allow data access only on an over-aggregated scale. The establishment of Regional Hospital Agencies (Agences Régionales de l'Hospitalisation: ARHs) has increased the need for local data. The guide prepared for agency directors draws attention to the existence of national surveys that can be "exploited" efficiently at the regional level. But this is not the general rule. Moreover, an effective regional policy implies a thorough grasp of the basic disparities and determinants within the region. Conversely, the multiple data series gathered at the local level should add to our overall knowledge by consolidation, comparison, or transposition.

The agencies therefore need to set up information systems to perform their missions, but the preceding comments also show the vital need for harmonization and pooling of data. Technical tools. Technically, this cannot be done without defining a basic "geographic building-block." The properties of these blocks must allow their aggregation into health and welfare typologies that reflect specific local behaviors. But it seems hard to collect data with a clear identification of "geographic building-blocks" if these have no organizational support from decentralized, empowered institutions.

At the technical level, the studies in progress suggest that statisticians will have an ever greater need for a local unit of description of health and welfare conditions. The present administrative divisions are not always relevant enough to ensure a transition between local data and overall data. Indeed, zoning issues—in their diverse aspects such as classifications, descriptions, mapping, and impact on health determinants—are now a central concern for health statisticians.

Setting up a common information system for the central government and the sickness-insurance system

The establishment of a common information system is the political prerequisite for ensuring that the data collected by the central government and the data gathered by the sickness-insurance system can be used jointly for policy-making purposes. This commonality was introduced by the Hospitals Act. The French Parliament made the law's implementation conditional upon third-party access to the common information system. The first step in this direction was a regulatory measure: decree no. 95-570 of May 6, 1995. This was followed by the reform bill concerning the "medicalized" control of healthcare spending, public and private hospital care, and the organization of the Social Security (i.e., sickness-insurance) system. While some finishing touches may still be required, these regulations and legislation lay the foundations of a regional, homogeneous system of information that can be used by the agencies.
provide inputs for regional health policies, for the new regional agencies, and for the national allocation and cross-subsidizing decisions that will henceforth be submitted to Parliament. The statistical systems will therefore be gradually remodeled to meet the goals of the new legislation in two areas: (1) achieving national consistency, for example through the activities of the CSIES, whose operating procedures will be readjusted in a forthcoming decree; (2) the operation of decentralized statistical units, which will be required to cooperate with the ARHs.

### SESI’s role in the health information system

SESI is the cornerstone of the public system of health statistics. It was established by a decree of March 23, 1982, and functions as a unit of the Health Ministry. It was given broad terms of reference in the following areas: research, surveys, investigation, coordination, and statistical summaries. In an innovative move, SESI was also assigned goals relating to the design of health information systems (box 2).

Unfortunately, SESI had to be constructed with statistical "building-blocks" that were essentially dedicated to specific technical directorates in the Ministry. Step by step, consistency had to be achieved in the new arrangement.

The multiplicity of participants within the Ministry, as well as the diversity

---

8. Actually, there were two units initially in charge of statistical studies: the Research and Planning Division, then the Statistics Department, which was linked to DORIQUE (the forerunner of SINTER, then known as the Information-Technology Sub-Directorate of the Directorate for Administration, Management, Personnel, and Budget). The statistical work of the two units focused, in particular, on a procedure called Budgetary Choices Rationalization. But the "cross-sectional" integration achieved was very modest.

---

**Major operations conducted or monitored by SESI in the health field**

**Health institutions**
- Management of FINESS register
- Annual statistics on institutions (SAE): comprehensive data on staff, activities, and facilities
- Analysis (at present, by sampling) of PMSI-generated data bases: data on types of patient care by category of stay, using a classification into "homogeneous patient groups" (Groupes Homogènes de Malades: GHM)
- Analysis of specific data bases from individual surveys or administrative data: care provided by health institutions to prison inmates; survey of emergency services (SAMU, SMUR); information on drug addicts who are users of the health and welfare system; surveys and reports from institutions involved in the fight against mental illnesses

**Staff**
- Management of ADELI register of healthcare professionals
- Analysis of data base on public-hospital personnel, with detailed breakdown by category
- Survey on technical staff of départements and local welfare bodies (Directions Départementales de l’Action Sanitaire et Sociale: DDASSs)
- Survey on hospital nursing staff mobility; survey on income of salaried physicians
- Research on costs and careers of hospital employees
- Research on changes in income of healthcare professionals

**Patients**
- Survey on hospital morbidity in private and public institutions; socio-demographic characteristics, conditions treated, length of stays, items of service
- Joint analysis with INSEE and CREDES of Ten-Year Health Survey
- Specific or ad-hoc surveys: health status of prison inmates; health status of newborns and perinatal practices; statistical analysis of health certificates, vaccination coverage; information from département health services and maternity and child-protection services; hospital patients infected by HIV; annual abortion statistics
- Construction of a sample of individuals insured by different social-insurance funds, for the purpose of selecting a long-term panel to observe healthcare consumption (this project is at the planning stage)

**Broad statistical summaries**
- Preparation of health-sector accounts: presentation of report on satellite account to commission on health-sector accounts
- International studies and comparisons; testing of concept of overall productivity of healthcare supply
- Compilation of local data bases on health and welfare (projects in progress)
- Yearbooks of health and welfare statistics; regional and département compilations (respectively, Chiffres et Indicateurs Départementaux: CID; Statistiques Sanitaires et Sociales sur les Régions Françaises: STATISS); knowledge bases on health information system (project included in Health Ministry master plan); contributions to all major reference publications in the health field
In 1994, the authorities decided to extend the PMSI test program to all public and private health institutions classified as "participating in the public hospital system" ("participant au service public hospitalier": PSPH) and comprising more than 100 beds for medium-duration and short stays ("moyen et court séjour": MCOs). Medical information was collected in the second half of 1994 from institutions in each region and forwarded to the Regional Health and Welfare Directorates (Directions Régionales de l’Action Sanitaire et Sociale: DRASSs) in June 1995. Cost-accounting data are correlated with the medical information received. Until year-end 1995, the DRASSs were largely occupied with the task of restating the accounting figures.

A Regional Medical Information Unit (Cellule Regionale de l’Information Médicale: CRIM) operates in each region. The unit comprises one inspecting physician (médecin inspecteur), one DRASS inspector, and a statistician. The team assesses and coordinates the use of data bases on the Summaries of Anonymized Discharges (Résumés de Sorties Anonymisées: RSAs). These are the basic units of the files compiled on each patient-stay. At present, the CRIMs are the only bodies where RSA data bases can be effectively analyzed. SESI has made an interface with SAS software (TABRSA) available to DRASS statisticians in order to facilitate an initial statistical treatment of the data bases.

An adjustment period is required to work out conflicting user requirements. The source of the data is administrative, and was initially designed to provide guidelines for a new budget allocation. As a result, the division of work in the CRIMs occasionally gives rise to conflicts: statisticians have to make the case for a more general approach. Recent technical developments should help them do this. The fact remains that the production of PMSI statistics is fairly time-consuming for each topic covered (institutional missions, morbidity, items of service, etc.). Despite the harmonization work undertaken at the design stage, problems inevitably arise concerning the equivalence between fields, concepts, and classifications. Because the source is used for administrative purposes, the interpretations sometimes diverge from other reference sources. Moreover, the resulting data bases are bulky by comparison with regional computing resources: the Paris-region base fills about 120 megabytes per half-year.

The first national base was released in late 1996. It consisted of data from the first two half-years of comprehensive collection (July 1994-July 1995). This will become the so-called "reference" base on which national averages and frequencies will be calculated—allowing healthcare institutions and the DRASSs to make comparisons. A statistical "dry run" on the new base was performed in 1997 to test the required sampling procedure.

Homogeneous Patient Groups (Groupes Homogènes de Malades: GHMs). Data are gathered on the type of stay, patient, diagnostics, items of service performed, and cost-coverage procedures. Patient-stays can thus be categorized using a classification in which each heading and GHM is homogeneous in terms of medical description, hospital organization, and cost. After the data are gathered and coded, a "grouping" software program is used to determine the classification.

Summary Activity Index (Indice Synthétique d’Activité: ISA): this indicator measures the standard level of each group (GHM) on the cost scale. Costs are calculated with a cost-accounting procedure compatible with the GHMs and applied to a panel of institutions. This standard cost was supposed to have been used as a reference for the allocation paid to hospitals. The new official guidelines state that "quality of service" and "geographic inequalities" should also be taken into consideration. But the cost reference will remain fundamental, even if not exclusive.

of players in the health statistics system, slowed the progress toward the goals formulated by the political authorities and the successive directors of SESI.

In 1995-96, the Ministry developed a ministerial master plan for information systems. As mentioned earlier, SESI co-supervised the plan with the Sub-Directorate for Information and Telecommunications Systems, a unit of the Directorate for Administration, Management, Personnel, and Budget (DAGPB). This initiative was intended to allow SESI to fully exercise its mission as architect of the information system in a complex field that is of utmost relevance to French social issues today.

SESI’s work in the health sector is organized around four major subject areas, each of which is covered by large statistical units:
- individuals, i.e., those whose health status deserves attention; for the health system, "individuals" are the equivalent of "demand," even if the corresponding needs are not necessarily expressed in a "market" in the conventional sense;

- the institutions that serve as health-system "producers";

- healthcare professionals;

- the environment in the broad sense, taking into account the growing concern for the territorial environment, its geographic, institutional, and socio-demographic characteristics, and its health determinants.

Health status of individuals

The Ministry's Office of Health Status manages surveys and collects information on morbidity. In practice, INSEE manages the register of individuals, the sickness-insurance funds manage the register of the insured, and many organizations such as INSEE, CREDES, INSERM, and RNSP conduct surveys and analyses that shed light on health status. SESI carries out research and is mainly involved in preparing summaries of the work done in this area. For example, it acted as the secretariat for the preparation of the report by the High Committee on Public Health; it assisted the Regional Health Observatories in developing homogeneous tables of indicators; and it participates in the analysis of data from major health surveys, notably the Ten-Year Survey.

Healthcare institutions

SESI plays an information-structuring role in this area, since it administers the FINESS register of health and welfare facilities.

In partnership with the Ministry’s Office of Healthcare institutions, SESI also manages the statistical surveys of hospitals, treatment facilities, and therapy centers—both private and public. The annual statistics on healthcare institutions form the core of the system: since 1995, these statistics provide conventional but harmonized indicators on the activities and staff of all health institutions, whatever their status. SESI also prepares studies on the institutions’ patients, facilities, and financial results.

The policy known as "medicalization of information systems" has engendered a new instrument: the PMSI, which helps to round out the system architecture by bridging the gap between supply and "demand."

PMSI classifies patients into homogeneous groups, and their stays are tabulated in statistical summaries, currently anonymized (boxes 3 and 4). SESI is gradually developing methods to analyze the summaries from two angles: supply (the application of healthcare resources) and demand (the treatment of patients and their medical conditions).

Healthcare professions

The Ministry’s Office of Welfare and Health Professions collects and checks statistical data on the medical, paramedical, and social-work professions as well as on training programs. The data are summarized for the purpose of

PMSI: data from the anonymized discharge summary

- FINESS number; sex
- Admission and discharge procedures; type of transfer
- Hospital stay of less than 24 hours; number of sessions
- Hospitalized in 30 days prior to admission date
- Main diagnosis; complementary diagnoses; items of medical service
- Weight at birth of newborns
- Age in days if under a year
- Length of stay; month and year of discharge
- Number of medical units attended; geographic code
- CMD and GHM numbers, and "return codes" for grouped Summaries of Standardized Discharges (Résumés de Sorties Standardisées: RSSs) and for Summaries of Anonymized Discharges (Résumés de Sorties Anonymisées: RSAs)

The data are, in fact, collected for lower-level units, then grouped together and anonymized for each stay. By comparison with other sources, the PMSI data will be partly complementary and substitutable. This will be a major advantage in linking and redefining fields that have thus far been uncoordinated in terms of the available information, namely: morbidity data, data on the hospital production function, and epidemiological data.
studying demographics, earnings, costs, and careers in these occupations. Among other things, SESI supplies the data that are used to set numerical quotas in the medical professions. SESI has developed a projection model that will shortly be respecified to take into account the new needs voiced by health-policy players. These varied requirements include: information on regional and local distribution of professionals; development of scenarios to reach predefined alternative targets; more detailed information on medical specializations; impact studies on the observed or potential changes in career patterns and organization—from the initial diploma to switching specialties at graduation.

SESI plays a structuring role in the field of healthcare professions by administering the occupational register, which is intended to become the common reference tool for the entire health sector. At the same time, SESI gathers and summarizes the data needed to model and guide the policy decisions that will define the framework for the future. At the end of the process begun by the introduction of the "smart card" for healthcare professionals (Carte Professionnelle de Santé: CPS), these now-scattered data will be increasingly consistent with the basic register. This will fully justify the use of new projection methods based on what are known as micro-simulation techniques.9 SESI has signed an agreement with the National Institute for Population Studies (Institut National d'Études Démographiques: INED) with the aim of combining the two parties' conceptual investments in this approach.

The environment

It is no longer possible to describe the health sector and to guide the decision-making process by means of indicators and statistical series without a better knowledge of the determinants and a fuller description of their impact. This is particularly necessary for the determinants that may be regarded as health-system environment variables.

The incorporation of determinants is crucial to "closing up" the design of the health information system, and SESI is making a special effort to achieve this in the following ways:

- by revamping the channels for transmitting information from the départements—a system dating from the previous government supervisory arrangements; this renovation coincides with the changes aimed at making the information congruent with the central government's newly defined missions;

- by developing local data bases on health, welfare, and the environment in order to meet the needs of new decentralized users and to provide inputs for local projections.

It is impossible to respond to the variety of local demand by applying comprehensive procedures on a nationwide basis. What is needed, therefore, is a greater consistency in regional and local approaches. In the medium term, there will have to be agreement on a relatively homogeneous "territorial building-block" combining institutional, social, economic, health, and environmental factors. This issue goes far beyond the terms of reference of SESI. However, SESI is determined to adapt to the changing roles of health-system participants and to anticipate the technical consequences of those changes.

Patrice Hernu
(at the time of writing, the author was on the staff of SESI, Health Ministry)
Abbreviation guide to the main French institutions referred to in the Healthcare section

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADELI:</td>
<td>Automatisation des Listes: &quot;List Automation&quot;: a register of healthcare professionals in each département</td>
</tr>
<tr>
<td>AM:</td>
<td>Agence du Médicament: Medecine Evaluation Agency (French government body)</td>
</tr>
<tr>
<td>ARH:</td>
<td>Agence Régionale de l’Hospitalisation: Regional Hospital Agency, in charge of allocating public funds to local hospitals</td>
</tr>
<tr>
<td>CNAMTS:</td>
<td>Caisse Nationale de l’Assurance Maladie des Travailleurs Salariés: National Sickness-Insurance Fund for Payroll Employees</td>
</tr>
<tr>
<td>CNE:</td>
<td>Centre National d’Exploitation: National Data Analysis Center</td>
</tr>
<tr>
<td>CRAM:</td>
<td>Caisse Régionale de l’Assurance Maladie: Regional unit of national sickness-insurance system</td>
</tr>
<tr>
<td>CREDES:</td>
<td>Centre de Recherches, d’Études et de Documentation en Économie de la Santé: a public-funded research center on the health sector</td>
</tr>
<tr>
<td>CREDOC:</td>
<td>Centre de Recherche pour l’Etude et l’Observation des Conditions de Vie: a public-funded research center on living standards</td>
</tr>
<tr>
<td>CRIM:</td>
<td>Cellule Régionale de l’Information Médicale: Regional Medical Information Unit</td>
</tr>
<tr>
<td>CSIES:</td>
<td>Commission des Systèmes d’Information des Établissements de Santé: Commission on Healthcare-Institution Information Systems</td>
</tr>
<tr>
<td>DAGPB:</td>
<td>Direction de l’Administration, de la Gestion, du Personnel et du Budget: Directorate for Administration, Management, Personnel, and Budget (Health Ministry)</td>
</tr>
<tr>
<td>DDASS:</td>
<td>Direction Départementale de l’Action Sanitaire et Sociale: local public agency in charge of coordinating health and welfare programs in a département</td>
</tr>
<tr>
<td>DGS:</td>
<td>Direction Générale de la Santé: Directorate General for Healthcare (Health Ministry)</td>
</tr>
<tr>
<td>DH:</td>
<td>Direction des Hôpitaux: Directorate for Hospitals (Health Ministry)</td>
</tr>
<tr>
<td>DRASS:</td>
<td>Direction Régionale de l’Action Sanitaire et Sociale: local public agency in charge of coordinating health and welfare programs in a region</td>
</tr>
<tr>
<td>DREES:</td>
<td>Direction de la Recherche, des Études, de l’Évaluation et des Statistiques: Directorate for Research, Analysis, Assessment and Statistics (Health Ministry)</td>
</tr>
<tr>
<td>EPAS:</td>
<td>Échantillon Permanent d’Assurés Sociaux: Long-Term Sample of Social-Insurance Beneficiaries (maintained by CNAM: q.v.)</td>
</tr>
<tr>
<td>GHM:</td>
<td>Groupes Homogènes de Malades: Homogeneous Patient Groups</td>
</tr>
<tr>
<td>HCSP:</td>
<td>Haut Comité de Santé Publique: High Committee on Public Health</td>
</tr>
<tr>
<td>INED:</td>
<td>Institut National d’Études Démographiques: National Institute for Population Studies</td>
</tr>
<tr>
<td>INSERM:</td>
<td>Institut National de la Santé et de la Recherche Médicale: National Institute of Health and Medical Research</td>
</tr>
<tr>
<td>IVS:</td>
<td>Institut de la Veille Sanitaire: Healthcare Watch Institute</td>
</tr>
<tr>
<td>MIRE:</td>
<td>Mission de Recherche: Research Unit of the Health Ministry</td>
</tr>
<tr>
<td>ORS:</td>
<td>Observatoires Régionaux de Santé: Regional Healthcare Monitoring Units</td>
</tr>
<tr>
<td>PMSI:</td>
<td>Programme de Médicalisation des Systèmes d’Information: Program to Enhance the Medical Content of Information Systems</td>
</tr>
<tr>
<td>RNISP:</td>
<td>Réseau National de Santé Publique: National Public Health Network</td>
</tr>
<tr>
<td>SAE:</td>
<td>Statistique Annuelle des Établissements de Santé: Annual Statistical Survey of Healthcare Institutions</td>
</tr>
<tr>
<td>SDMSI:</td>
<td>Schéma Directeur Ministériel des Systèmes d’Information: Health Ministry master plan for information systems</td>
</tr>
<tr>
<td>SESAM-Vitale:</td>
<td>&quot;smart card&quot; to be issued to insured persons by the national sickness-insurance system</td>
</tr>
<tr>
<td>SIAM:</td>
<td>Système d’Interrogation de l’Assurance Maladie: Sickness-Insurance Query System</td>
</tr>
<tr>
<td>SINTEL:</td>
<td>Systèmes d’Information et de Télécommunications du Ministère: Sub-Directorate for Information and Telecommunication Systems (Health Ministry)</td>
</tr>
<tr>
<td>SNIR:</td>
<td>Système National d’Interrogation et de Requêtes: National Query and Request System</td>
</tr>
<tr>
<td>SROS:</td>
<td>Schéma Régional d’Organisation Sanitaire: Regional Healthcare Organization Plan</td>
</tr>
</tbody>
</table>
The Ten-Year Health Survey of 1991-92
Assessment of methods and results

France’s latest Ten-Year Survey on health and medical care was conducted from April 1991 through March 1992. It is the fourth in a series begun in 1960, whose methods and results have been closely comparable since 1970. The findings have been analyzed simultaneously by INSEE, the Health Ministry, and CREDES, as well as by many research teams—foremost among them the INSERM units. The survey has already been discussed in more than fifty articles, studies, and special publications. As Pierre Mormiche points out, the survey is still providing exclusive information in a wide range of areas several years after the end of the data-gathering phase.

The Health Surveys exhibit three major distinctive features by comparison with most other sources in the same field:

- The first, unquestionably, is the simultaneous collection of data on healthcare and on health status. The survey is one of the very rare sources of highly diversified data on morbidity covering the entire population.

- The second is the level of detail with which the data can be analyzed. Like most INSEE surveys, the Health Survey records many social and demographic characteristics of the households interviewed. These criteria can therefore be cross-tabulated with items on morbidity and healthcare consumption.


From the enumeration of healthcare items to that of diseases, there is no shortage of data-gathering problems specific to the health field. Out-of-the-ordinary medical and epidemiological procedures are required to summarize the information gathered. The end result is a comprehensive picture of the population’s health status. This corpus of methods must be preserved from one survey to the next. The corpus also needs to be evaluated by agencies qualified to address medical issues. These concerns explain why the survey organization is marked by an open-minded approach that is, if not unprecedented, at least firmly asserted.

Survey organization and methods

Measuring healthcare consumption: “false zeros” and omissions

The measurement of healthcare consumption and particularly of its concentration—that is, the proportion of consumers involved—raises a classic problem owing to their relatively low frequency. Healthcare consumption is infrequent even for patients suffering from a chronic illness requiring continuous treatment.

The patient may well consult his or her physician at rather long intervals. If the collection period is too short, we might find an unacceptable proportion of “false zeros,” i.e., people reporting no consumption of healthcare services, pharmaceuticals, or prosthetic devices, whereas they are actually in continuous treatment. Conversely, asking respondents to recall consumption over too long a period could generate many omissions due to forgetfulness.

In the mid-1960s, a series of tests was conducted to solve this problem. The findings led INSEE to set a relatively long collection period: three months. The danger was that if the interviewer waited that long between two visits, many households would give up and many omissions would occur. To prevent this, the interviewer visits the household every three weeks during the survey period.

The households surveyed were thus obliged to record all their consumption of services and products for three months, and to receive five visits by the interviewer. Yet this heavy constraint had no unacceptable consequences on the survey’s success. For the latest survey, in 1991-92, 6.7% of the 8,750-odd households contacted by interviewers refused to take part in the survey, and 7% of those who started the interviews gave up before the final visit (box 1). As in many health surveys, we were probably helped by public interest in the subject.

Courrier des statistiques, English series no.4, 1998
The second precaution designed to minimize omissions due to forgetfulness is a routine cross-check between care and morbidity. This consists of two procedures: (1) Every time a healthcare consumption item is reported, the interviewer asks about the motive, and a heading is “opened” for a disease, accident, pregnancy, etc. (2) The survey begins by a questionnaire on existing medical conditions. In each later visit, the interviewer begins by asking if the conditions reported in the earlier visits can be regarded as cured or, in the negative, if they have necessitated further care in the intervening three weeks. This cross-checking minimizes the number of omissions due to forgetfulness about healthcare consumption, but also about the respondents’ illnesses or health problems (tables 1 and 2).

Record morbidity: the insuperable barrier of ignorance

Because of the need for an accurate enumeration of medical consumption items, interviewers record morbidity details with the utmost precision. Illness reports are, however, a particularly fragile type of information, constantly vulnerable not only to omissions but also to errors. It is not unusual for respondents to confuse similar names of medical conditions; to attribute a drug prescription to one illness when it has been issued for another; and to report symptoms of a single illness as separate illnesses. The INSEE interviewers and staff who conduct the survey obviously lack the medical qualifications needed to check and correct this type of confusion as well as to detect likely omissions.

In 1970, to remedy this problem, INSEE introduced a consistency check between reported illnesses and the purchases of healthcare and medication. This procedure was carried out with the assistance of the Center for Research, Analysis, and Documentation on Health Economics (Centre de Recherche, d’Études et de Documentation en Économie de la Santé: CREDES).1 The work is conducted by a team of doctors under the scientific supervision of CREDES.

The check is a two-stage process:

- During the data collection, a check is performed between two visits thanks to a high-speed transmission of the completed questionnaires from the interviewers to the INSEE Regional Offices and on to the medical team in Paris. The forms are “anonymized,” i.e., all personal identification data have been removed. The medical team can check that each case file contains sufficient information to remove any error or ambiguity, and it can send feedback to the interviewer with whatever questions it deems necessary. At this stage, the team does not yet correct any questionnaire item.

- At the end of the three months of data collection from each household, the files are sent to the medical team, which only then corrects the statements that it regards as erroneous, assigns WHO (World Health Organization) codes to the illnesses, and forwards the files to

---

1. At the time, the Medical Economics Division of the Centre de Recherche pour l’Étude et l’Observation des Conditions de Vie (CREDOC), a living-standards research agency. In 1985, the Medical Economics Division broke off from CREDOC to become CREDES.
However thorough, these arrangements obviously cannot document undetected illnesses. A person with abnormally high blood pressure but who does not suffer from it—or not enough to prompt a visit to a doctor—does not know that he or she has arterial hypertension. The person will therefore fail to report this condition to the interviewer. No other source allows the phenomenon to be identified. Since no physician has been consulted, no one knows that the respondent suffers from hypertension.

Thanks to the methods for preventing omissions and to the review of responses by a qualified medical team, the survey probably manages to provide a fairly accurate picture of known or diagnosed morbidity, but it inevitably falls short of a complete description of actual morbidity, insofar as this can be measured.

Assessing health status
Enumerating people’s ailments is one thing. Summarizing this information in a variable such as “health status” is another. Colds and cancers do not add up. Each condition may exhibit extremely different degrees of seriousness. The classification of respondents on a health-status scale is thus an entirely different operation from the gathering of basic information.

Yet there are two essential objectives in public health: (1) assessing the health status of the component groups of the French population, and (2) tracking the changes in health status over time.

Demographers in many countries have data of fairly good quality on the causes of mortality. They can

---

Table 1 - Overall procedure table for data collection in 1991-92 Health Survey

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Interviewer</th>
<th>Household</th>
<th>INSEE Regional Office (RO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st visit</td>
<td>Initial questionnaire (IQ)</td>
<td>Fills in 1st notebook and saves drug packaging</td>
<td>Checks IQs</td>
</tr>
<tr>
<td>3 weeks</td>
<td>Leaves 1st healthcare notebook with household</td>
<td></td>
<td>Opens “shuttle” questionnaire (SQ)</td>
</tr>
<tr>
<td></td>
<td>Returns IQ to RO</td>
<td></td>
<td>Send SQ to interviewer</td>
</tr>
<tr>
<td>2nd visit</td>
<td>1st consumption questionnaire (CQ)</td>
<td>Fills in 2nd notebook and saves drug packaging</td>
<td>Checks CQ and SQ</td>
</tr>
<tr>
<td>3 weeks</td>
<td>Leaves 2nd healthcare notebook with household</td>
<td></td>
<td>Sends SQ and sample gift books to interviewer</td>
</tr>
<tr>
<td></td>
<td>Returns 1st CQ, SQ, and 1st notebook to RO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd visit</td>
<td>2nd consumption questionnaire (CQ)</td>
<td>Fills in 3rd notebook and saves drug packaging</td>
<td>Checks CQ and SQ</td>
</tr>
<tr>
<td>3 weeks</td>
<td>Leaves 3rd healthcare notebook with household</td>
<td></td>
<td>Sends every second file to medical team</td>
</tr>
<tr>
<td></td>
<td>Returns 2nd CQ, SQ, and 2nd notebook to RO</td>
<td></td>
<td>Sends SQ and selected gift books to interviewer</td>
</tr>
<tr>
<td>4th visit</td>
<td>3rd consumption questionnaire (CQ)</td>
<td>Fills in 4th notebook and saves drug packaging</td>
<td>Checks CQ and SQ</td>
</tr>
<tr>
<td>3 weeks</td>
<td>Leaves gift book</td>
<td></td>
<td>Sends every second file to medical team</td>
</tr>
<tr>
<td></td>
<td>Leaves 4th healthcare notebook with household</td>
<td></td>
<td>Sends SQ and selected gift books to interviewer</td>
</tr>
<tr>
<td></td>
<td>Returns 3rd CQ, SQ, and 3rd notebook to RO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5th visit</td>
<td>4th consumption questionnaire (CQ) and final questionnaire (FQ)</td>
<td></td>
<td>Checks CQ, SQ, and FQ</td>
</tr>
<tr>
<td></td>
<td>Leaves 4th healthcare notebook with household</td>
<td></td>
<td>Sends checked files to medical team</td>
</tr>
<tr>
<td></td>
<td>Returns 4th CQ, SQ, 4th notebooks, and FQ to RO</td>
<td></td>
<td>Sends “failed” address files to National Data Analysis Center (CNE) in Toulouse</td>
</tr>
<tr>
<td></td>
<td>Prepares mailing list of respondents who want to receive survey findings</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

IQ = initial questionnaire
CQ = consumption questionnaire
SQ = “shuttle” questionnaire with listing of illnesses
FQ = final questionnaire

---

Courrier des statistiques, English series no.4, 1998 25
therefore proxy the health of the living by that of the deceased. But the data on population health are hard to come by. They are almost always incomplete or heavily biased. The data are incomplete when they are based on morbidity registers, which cover only the few illnesses that must be reported by law in France. The data are biased in their representativeness when they are drawn from surveys of doctors or institutions, as only the individuals who use the healthcare system can be captured. Another source of bias is the quality of information compiled from statements by a representative sample of the population. Here, the bias is largely due to respondents’ ignorance or omission of some aspects of their actual morbidity. Omissions can be diminished by the interview techniques mentioned earlier, as well as by the use of predefined lists designed to stimulate respondents’ memories, as is done in the first survey visit. Ignorance obviously cannot be reduced unless respondents were to undergo a medical examination—a method that would demand sizable resources and raise major ethical problems.

In a period where public medical awareness is spreading fast, as has been the case in France for several decades, ignorance is on a fairly steep downtrend. The more often people see a doctor, the better informed they will be about their health status. One result is the increase in the number of reported illnesses at each age with each successive survey. But this increase, recorded by the survey, is due to the combination of two developments: the actual change in health status, whose trend is not known; and the respondents’ greater knowledge of medical matters, whose scope is not known either.

We have used two methods to resolve these ambiguities. They provide convergent answers to the question of assessing actual trends in health status.

The first method was developed by CREDES and has been applied since 1970. The medical team that checks and tabulates respondents’ conditions is asked to provide an overall assessment of their health status based on all the information available in the survey case file. The diagnosis must comply with a framework of conventions and rules to ensure consistency from one survey to the next. The result is striking: despite the increase in reports of illnesses, the medical opinion on the average health status for a given age has steadily improved from one period to the next.

This method, while admittedly complex, is quite powerful. It has allowed the direct comparison of health statuses of different social groups, a comparison of calendar aging and medical aging, and a
measurement of the change in public health between two surveys. The second method was introduced on an experimental basis in 1980, on the recommendation of INSERM teams. It is in keeping with an approach promoted by the World Health Organization, which has

---

**Disability-free life expectancy: three more years in good health**

In the past decade, French life expectancy at birth has risen 2.5 years, from 70.4 to 72.9 years for males and from 78.6 to 81.1 years for females.

How does this trend affect the disability rate among the elderly? A report on “Health in 2010” by the French government’s planning agency (Commissariat Général du Plan) outlines three alternative scenarios:

- Technical and medical progress, living conditions, and insurance coverage will raise life expectancy, but will not be able to alter the timing of the onset of debilitating illnesses. The extra years of life will be years of life with disabilities. This is the extension-of-morbidity scenario.
- The average age of the onset of debilitating illnesses and the age at death will shift in parallel. This is the stable-morbidity scenario.
- The average age of the onset of debilitating illnesses will increase faster than the age at death. This is the morbidity-compression scenario.

Recent estimates of disability-free life expectancy strengthen the likelihood of the third and most optimistic scenario. The values at birth rose in the 1980s by 3 years from 60.8 to 63.8 for males, and by 2.7 years from 65.8 to 68.5 for females.

Disability-free life expectancy is a summary indicator of the health status of the entire population. The first step in the calculation is to separate the years lived “with disability”—i.e., with a relatively serious or debilitating condition—from the other years. We distinguish between the “severe disability” level and the “broad disability” level.

“Severe disability” applies to the population of certain types of institution (hospital residents, psychiatric hospital inmates, and seniors living in retirement and nursing homes); people confined to their dwellings, including those who can spend some time out of bed but cannot leave the house even with help; and the temporarily bed-ridden. “Broad disability” comprises all the cases described above plus periods of sick leave (from the workplace, school, or other) without being bed-ridden, and—most important—all persons who are not home-bound but suffer a permanent disability or handicap.

The average number of years with moderate disability in 1991-92 was 7.9 years for males (of which 0.8 years of sick leave) and 10.3 years for women (of which 1.2 years of sick leave).

**A decline in morbidity?**

Between 1981 and 1991, life expectancy with broad disability, comprising all the instances of severe or moderate disability listed above, fell 0.5 years for males and 0.1 years for females, decreasing from 9.6 to 9.1 years for males and from 12.7 to 12.5 years for females. While total life expectancy has risen, the figures point to a decline in morbidity that involves not only a smaller proportion of disability-ridden years in total life expectancy, but also a very mild decrease in the absolute number of disability-ridden years.

As regards severe disability (people committed to institutions for health reasons, confined to their homes, or bed-ridden), we find an absolute decline from 1.5 to 1.2 years for males, whereas the years of severe disability for females remained stable at 2.3. In the case of women, the decrease is only relative.

International comparisons with the United States and Japan suggest that in the developed countries the change in the life expectancy without severe disability is consistent with that of overall life expectancy. For life expectancy without broad disability, the results are far less convergent.

**Decrease in disabilities at each age**

If the disability rates by age had not changed since 1981, the disability-free life expectancy for males would have been 62.3 years in 1991 versus the 63.8 years actually observed; for females, the figure would have been 67.1 years instead of 68.5 years. In other words, the gains in disability-free life expectancy would have been twice as small as those effectively recorded. Half of the gain is therefore due to the increase in life expectancy, and the other half to the decrease in disability at each age.

<table>
<thead>
<tr>
<th></th>
<th>1981</th>
<th>1991</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Males</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life expectancy</td>
<td>70.4</td>
<td>72.9</td>
<td>+ 2.5</td>
</tr>
<tr>
<td>of which with severe disability</td>
<td>1.5</td>
<td>1.2</td>
<td>+ 0.7</td>
</tr>
<tr>
<td>Life expectancy without severe disability</td>
<td>68.9</td>
<td>71.7</td>
<td>+ 2.8</td>
</tr>
<tr>
<td>of which with moderate disability</td>
<td>8.1</td>
<td>7.9</td>
<td>- 0.2</td>
</tr>
<tr>
<td>Disability-free life expectancy</td>
<td>60.8</td>
<td>63.8</td>
<td>+ 3.0</td>
</tr>
<tr>
<td><strong>Females</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life expectancy</td>
<td>78.6</td>
<td>81.1</td>
<td>+ 2.5</td>
</tr>
<tr>
<td>of which with severe disability</td>
<td>2.3</td>
<td>2.3</td>
<td>0.0</td>
</tr>
<tr>
<td>Life expectancy without severe disability</td>
<td>76.3</td>
<td>78.8</td>
<td>+ 2.5</td>
</tr>
<tr>
<td>of which with moderate disability</td>
<td>10.4</td>
<td>10.3</td>
<td>- 0.1</td>
</tr>
<tr>
<td>Disability-free life expectancy</td>
<td>65.9</td>
<td>68.5</td>
<td>+ 2.6</td>
</tr>
</tbody>
</table>

Source: INSEE Première no. 281, October 1993.
gained acceptance in many countries over the past decade. The goal is to assess the health status of persons not so much from a summary of their illnesses and other accidents as by examining the consequences of these events on the individual’s capacity to perform everyday tasks. We therefore compile relatively detailed lists of disabilities and we use these tables to calculate summary health-expectancy indicators of the kind described in box 2.

Preserving comparability

In 1991, as in the preparation of the next survey, the question is whether the priority should be to modernize the methodology or to preserve the time comparability of successive surveys. In the end, we gave priority to comparability. Further research on the issue has confirmed the wisdom of this choice. Among the main health and consumption issues of the 1990s are two questions for which time series alone can offer helpful insights:

- The first question is tied to the concerns that have been raised—paradoxically—by the increase in life expectancy: how is the general health status of the population changing and, in particular, in what state of health will people spend their extra years?

- The second question is more closely related to social and economic developments: what has been the impact of the problems of the 1980s—and, no doubt, of the 1990s (unemployment, social exclusion, etc.)—on health and access to healthcare for each social category and each age cohort? how has inequality in this area evolved?

Thanks to the advances in the processing capabilities of our computer resources, we have been able to answer these questions in optimal conditions. In previous decades, the comparison between the latest data and those of earlier surveys was typically limited to a comparison of the latest findings with the tabulations prepared at the time of the earlier survey. But the questions we are asked change, and the tables compiled ten or twenty years ago do not always include the information we want today. The construction of the required results from the old files usually involved a long and expensive recovery of the individual data.

The study of the changes between 1980-81 and 1991-92 has consistently relied on the simultaneous analysis of the files from the 1980-81 and 1991-92 surveys. Two factors have ensured a high reliability of the change measurements: (1) the lack of programming biases, which are common when data tabulations occur ten years apart; (2) consistent collection methods (length of survey period, data checks by medical teams, questionnaire methods, etc.). With the same priority in mind, CREDES is currently retrieving the files from the 1970-71 survey, which will double the length of the observation period.2

A precise illustration of the determination to ensure comparability above all else is provided by the question sequence on disabilities, introduced at the request of INSERM and SESI in 1980-81. The series began with a screening question worded as follows: “Does the household comprise any disabled persons, or persons who experience some inconvenience or difficulties in dealing with daily tasks?” This wording is, of course, open to debate and criticism. Admittedly, the estimation of the number of people suffering from handicaps or health problems on the basis of this question is a highly arbitrary exercise. The epidemiology of disabilities made sufficient progress at the international level in the 1980s to offer better-controlled question sequences. We nevertheless decided to reproduce the question word for word in the latest survey. It is this continuity that allowed the first-ever estimate of the change in the French indicators for disability-free life expectancy, and made it possible to establish that the gains in life expectancy had gone hand in hand with an improvement in health in the extra years.

A massive, coordinated operation of crucial importance in the health sector

Like all surveys on household living conditions, the French Health Survey is on a far smaller scale than the population census and related operations such as the Family Survey. The sample consists of fewer than 8,000 households—far behind the Labor-Force Survey (80,000) or the Housing Survey (32,000). In international terms as well, it is fairly modest and less frequent than its counterparts. The National Health Interview Survey (NHIS) in the United States covers about 100,000 people a year, or one million per decade—fifty times the number in the French survey. The highest frequency is that of the United Kingdom, which has conducted about ten surveys on public health in a decade.3 Yet the French Health Survey is a massive operation: a one-year data-gathering period; almost
The cost of the operation and the specific nature of the subject have led INSEE to work in partnership with representatives of the leading health-research organizations. The partnership extends from the entire survey-preparation period to the data-gathering phase and the initial analysis. Our partners include CREDES, SESI, the Ministry of Employment and Solidarity’s Research Mission (MIRE), the CNAMTS, and INSERM. The purpose of this wide-ranging cooperation is to benefit from the advice of health-system experts—an area where INSEE’s in-house competencies have been traditionally modest. We can thus avoid costly errors and reach an informed consensus on the additions or alterations needed in the questionnaires and survey methods.

The Project Group formed for the latest survey met almost monthly between February 1990 and May 1991. In addition to the inputs provided by participants themselves, SESI acted on behalf of INSEE to determine the specific needs of the Health Ministry’s main directorates. The survey was thus the outcome of intensive teamwork—although INSEE had the last word in the decisions and was therefore responsible for the choices made.

Information provided by the survey

Cooperation ensured not only the survey’s approval by health-system players, but an intensive exploitation of its findings. More than four years after the end of the data-gathering period, many studies were still being published on a wide range of issues. We have also made a special effort to describe the survey source and its potential applications to the research community in order to encourage specialists to use it.

A coordinated analysis of results, widely open to third parties

Immediately following the final decisions on questionnaires and methods, the Project Group was gradually transformed into an Operations Group, which functioned until 1994. In this capacity, it served a triple purpose:

- It compiled the “priority analysis plan” for the survey—covering the period January 1993 to mid-1994—and it distributed the workload among its members. The aim was to publish the most eagerly expected results as quickly as possible. The first step was to prepare a list of them. In this undertaking, the cooperation with officials close to the Health Ministry and Social Security system, and with the research community, was a means of ensuring a relevant choice. The next step was to coordinate the partners’ efforts so as to avoid duplications and omissions. The initial results were published at year-end 1992, nine months after the end of the data-gathering. This 60% improvement in timeliness from the previous survey was greatly facilitated by technological advances: computer assistance for the control and coding teams; operating software offering a far more user-friendly environment; and PCs for the editorial work. In mid-1994, each partner organization recovered its total freedom to exploit survey results.

- It reviewed the proposals for supplementary qualitative surveys and specific analyses by university and non-academic research teams, funded by calls for bids by MIRE. This now well-established form of partnership between INSEE and MIRE enables specialist teams of researchers or scholars to access the “anonymized” survey files. The purpose is to increase the output of findings in areas designated by the survey partners themselves.

- The Operations Group held a public conference at the Research Ministry in 1994 to present the survey and its contributions. The event was aimed at two audiences: health-policy decision-makers, and the academic community. The aims were:

  - to present the initial analyses conducted for over a year by the five organizing partners, and submit them to an expert audience for discussion;

  - to present the source and its potential applications to researchers and potential users: by taking advantage of it, they would help to optimize the heavy statistical investment represented by the survey.

In sum, the inter-organizational cooperation that is a feature of the French Ten-Year Health Surveys from the outset is combined with a determination to open the survey analysis to all specialists in the field ([3] and [4]).

Overview of publications

Five organizations were directly or indirectly responsible for the many analyses and publications based on the survey: INSEE, CREDES, SESI, MIRE, and INSERM. INSEE’s publications—INSEE Première, Économie et Statistique, Données Sociales, and INSEE Résultats—largely contributed to the dissemination of the findings. CREDES published about twenty items under its own imprint and contributed to its partners’ journals. SESI made many contributions, including a special “survey” issue of its magazine Solidarité-Santé, prepared with the help of several researchers or scholars to access the “anonymized” survey files. The purpose is to increase the output of findings in areas designated by the survey partners themselves.

4. Numbers in brackets refer to items in the bibliography p. 34.
members of the Operations Group. Other studies were conducted by MIRE-funded research teams and several other research groups, including INSERM’s.

Healthcare consumption

About a dozen publications have focused on the following issues:

- As in 1970 and 1980, we published a volume of “standard” tables for about fifteen types of consumption such as visits to general practitioners, specialists, dentists, paramedical professionals, and pathology laboratories, as well as pharmaceutical purchases. The tables show the average annual consumptions per person, the percentages of consumers recorded in the three-month survey period, and average prices. The statistics are tabulated by main socio-demographic criteria (sex, age, social group, individual occupation, income, economic activity status, household type, etc.) and by type of medical insurance coverage. The tables thus provide a basis for assessing the disparities and inequality in healthcare consumption and access. We also publish a large group of time series comprising the standardized tables by sex and age. By reproducing in strictly identical form most of the specifications adopted in 1970 and 1980, we can track the main shifts in consumption patterns in the 1970s and 1980s without having to return to the survey data file.

- One of the main results afforded by comparability was that we were able to measure—indepen dent of price changes—the medium-term increase in healthcare consumption: we found that its growth rate in the 1980s slowed to half its pace of the 1970s. We also showed that the impact of aging on the increase was minimal and would very probably remain subdued in the next fifteen years.

- An unexpected and relatively encouraging finding was the decrease in the consumption of dental care by teenagers and young adults. This phenomenon is consistent with the evidence of an improvement in the age group’s mouth and dental hygiene. The consumption downtrend may reflect the success of prevention campaigns, particularly among pre-teens and teenagers (box 3) ([3], [5], [6], [7], [8]).
Health and healthcare-consumption in the Ten-Year Surveys

From their inception, the surveys on health and healthcare have addressed two issues concurrently: medical consumption and the health of population groups. The data-collection methods are specifically designed to allow a continuous cross-tabulation of medical conditions and care items.

From one survey to the next, however, there has undeniably been an significant shift in the focus of survey data analyses. A cursory breakdown of survey-based publications shows that the proportion of studies specifically devoted to morbidity, disability, and other health issues rose from 12/77 (15.6%) for the 1970-71 survey to 35/108 (32.4%) for the 1980-81 survey to 28/72 (38.9%) for the 1991-92 survey at the time of writing. Nearly all the remaining studies are devoted to health care and medical-insurance coverage: the share of these topics has therefore been trending down.

There are three explanations for this shift in emphasis in the published studies:

- The disappointing realization that inequality in healthcare access has barely been reduced even as the Social Security system now provides medical-insurance coverage to almost all the population. Perhaps we should focus on the goal (public health) rather than the means used to attain it (national medical insurance).
- The drive to reduce the Social Security deficit has led to a reduction in the percentage of reimbursed expenses. Clearly, therefore, we need to examine the impact of the cuts on public health and to look at ways of minimizing their negative effects.
- The repeated announcements of a significant aging of the French population in the decades ahead are raising fears of an explosion of healthcare and costs—which gives fresh relevance to the issue of health-status trends among the elderly.

The breadth of the survey content probably explains why it has been possible to accommodate these shifts in focus without having to make major adjustments in the survey design.

Medical-insurance coverage

Two major types of findings were made in this area:

- The broad improvement in coverage continued. By 1980, most of the French population was covered against basic (primary) risk. The 1990s saw a sizable extension of supplementary coverage via mutual insurance organizations and private insurance, particularly among older age groups. An assessment was made of the influence of higher insurance-coverage ratios on the increase in consumption, and analysts found that the impact in the 1990s was altogether minimal.

- A description was prepared of insured groups, notably of the “under-insured” and the change in their numbers since 1980: the rates of dependents per insured person were also examined. The segment of the population whose coverage failed to improve comprises a massive proportion of young adults as well as families of low-skilled workers—mainly employed by small firms—and the unemployed ([7], [8], [10]).

The supply of healthcare

A detailed study was prepared on healthcare-production conditions, including locations, related items of service, methods of payment, and producer characteristics—i.e., specialty and type of “convention,”5 for example the penetration rate of “Sector 2” conventions by medical specialty, by consumer groups, etc. ([9]).

Inequality

Studies have shown that healthcare consumption has increased for all social and income groups, but that inter-group inequality—which had been narrowing for several decades—widened in the 1980s. This finding is relevant to policy planning on healthcare access: the social distribution of health remains uneven, and access to healthcare, while it provides a safety net, does not reduce the system’s inequality ([8], [10]).

Morbidity and health status

The survey has shed much light—some of it new—on these topics. This makes the survey one of the most original of the various information sources available in France (box 4). Noteworthy findings include the following:

- The morbidity data, first published by CREDES, make it possible to determine the prevalence of the main groups of conditions for each age, and the changes in the number of reported cases since 1980. The data cover all illnesses including chronic and non-lethal. This complements the data on mortality causes derived from the analysis of death certificates.

- Two topics were the focus of specialized studies: accidents having entailed the consumption of (a) healthcare or (b) medication. Using the survey data, we can quantify the occurrence of everyday accidents, including domestic accidents and recreation-linked accidents. Despite the considerable

5. “Convention”: contractual arrangement between the practitioner and the Social Security system that determines the percentage of fees reimbursed to the insured; under the Sector 2 conventions, physicians are allowed to exceed the basic fee by an agreed amount, but the patient is not reimbursed for the difference.
attention they received during the period, they have seldom been enumerated in a reliable and representative manner. Thanks to the survey’s extremely comprehensive coverage, we can even estimate the frequency of commonplace ailments such as eye trouble, toothaches, back pain, etc.

- The construction by CREDES, as in 1970 and 1980, of a summary health-status indicator based on the medical team’s assessment of vital risk and disability. The gauge has shown the improvement in the overall health of the French population in the 1980s, but it has also shown the increase in inequality in this field—corroborating the trends observed in life expectancy.

- The analysis of responses to the questions developed by INSERM in 1980 and repeated in the 1991-92 survey has made it possible, for the first time in France, to estimate the change in disability-free life expectancy. These findings were eagerly awaited6 and extensively reproduced in several official documents such as the 1995 report by the High Committee for Public Health (HCSP). What the findings showed was that the aging of the population entailed an increase in disability-free years—i.e. years in which people found their health status acceptable. This dispelled the fears voiced by many theoretical analysts that aging would entail a pandemic of disabilities ([11], [12], [13], [14], [15], and [16]).

Other contributions

- A study on the consumption of psychotropic (mood-enhancing) drugs established the volume consumed and the breakdown by sex, age, family status, social group, and employment status. The analysis confirmed that the “family cocoon” plays a protective role, but

---


---

What the statistics reveal

Between the ages of 15 and 50, more females than males wear glasses

Below the age of 50, i.e., in the age group where short-sightedness (myopia) is still the main visual impairment, the proportion of eyeglass and contact-lens wearers is higher among females than among males. The gap exceeded 15 points between the ages of 15 and 50 according to the 1991-92 Health Survey. The difference had already been observed in 1980 but had gone unnoticed. The most recent U.K. data reveal the same phenomenon, with slightly narrower differences.

The gender gaps are not due to the fact that men and women have different occupations. Whatever the occupational category examined, the proportion of women with eyesight correction exceeds that of their male counterparts. The differences are wide among manual workers and clerical workers, but not among managers and professionals. At a more detailed level, the gaps between occupations prove to be considerable. Despite these differences, which range from a factor of one to five, the gender gap is consistent throughout the occupation scale. With the exception of business managers in administrative or sales departments, the proportion of women wearing corrective lenses is consistently higher. The gap is significant even among teachers.

In fact, sex is a powerful and statistically significant explanatory factor regardless of age, occupation, or educational attainment. It passes the test of a regression model that measures its effect “all other things being equal.” The gender gap, therefore, is not due to differences in occupational status, but contributes an additional factor.

Adolescence seems to be the decisive period

Another factor seems to support the argument of a physical predisposition: female puberty, which occurs—on average—at thirteen and a half years. The gender gap moves from zero before age 10 to moderate between ages 10 and 15, and peaks at age 15-20. This distribution is a topic of research for medical specialists: is it merely a coincidence, or an explanatory factor? And, if the latter, does it deserve a prevention campaign?

The age hypothesis is open to question. Can we be sure that working conditions—or, more accurately, study conditions—for teenagers of both sexes are similar? First, boys today are ten centimeters taller than girls. The difference is heavily concentrated in the torso rather than the legs. This means that when they are seated at their desks the distance between their books and notebooks and their eyes is very uneven (since the furniture is, as a rule, identical). Second, the prevalence of recreational reading not directly related to school—and in particular the proportion of intensive readers—is far higher among young girls than among young boys: the 1988 survey on leisure activities puts the percentages at 20% versus 10%.

Women may have a more fragile eyesight because they read more at an earlier age and at a closer distance. The combination of these two factors entails either ocular impairments, hence a more frequent use of correction lenses, or a greater vision fatigue without an explicit “condition” in the medical sense. The data of the 1980-81 survey, which were unavailable in 1991, do show that among eyeglass or contact-lens wearers, the proportion of occasional wearers before age 45 is far greater among women than among men. This provides only a partial explanation, however, for the gender difference concerning correction lenses. In the 20-34 age group, between one-half and two-thirds of the gender gap is due to the higher proportion of female occasional wearers; in the 35-44 age group, the excess accounts for the entire gender gap. Over age 50, the phenomenon is reversed, since we find more occasional wearers among men than among women, both in absolute and proportional terms.

---

Excerpted from INSEE Première no. 475, July 1996.

---

5
Can one track the medical consumption of households... in summer?

Owing to data-gathering problems, absent households, and the unavailability of interviewers, earlier Health Surveys did not cover July and August. The two lost months would be compensated by a partial overlap of the waves in later surveys. However, it is probable that households significantly modify their medical consumption and health-related behavior in summer—which would partly bias the quantitative estimates.

Three phenomena need to be taken into account: seasonal fluctuations in health status, illnesses, and accidents; the difficulty for vacationers to find professional help in an unfamiliar medical environment; and the absence of many practitioners, on vacation themselves.

We therefore conducted a summer test wave in the main cities of seven French regions, with the aim of assessing whether the data-gathering problems could be overcome and—if so—of testing a questionnaire that could shed light on the changes in morbidity and medical consumption during the summer months.

Organization
• A sample of 1,000 households, concentrated in urban units of 20,000 or more inhabitants, in seven regions: Aquitaine, Île-de-France (the Paris region), Midi-Pyrénées, Nord-Pas-de-Calais, Pays de la Loire, Provence-Alpes-Côte d’Azur, and Rhône-Alpes.
• A standard 12-week collection period, from mid-June to early September.
• A consumption record covering the vacation period.

Methodological goals
• Are the required interviewers available? If not, can they be temporarily replaced, and does this affect the quality of data collection and the abandonment rates?
• If the households interviewed go on vacation, does this influence the non-completion rates, and are healthcare consumption records kept properly during vacations?
• Can the survey offices perform management and checking tasks adequately, given:
  - summer absenteeism
  - the variable intervals between visits? This can make the exchange of information between the interviewer and the Regional Office risky or impossible—and, in many cases, make it very urgent.
• What changes need to be made in the instructions to interviewers?

Statistical objectives
• To measure summer consumption in order to assess the extent of seasonal fluctuations (and, in a later stage, the impact on the national accounts of the health sector).
• To assess incident summer-specific morbidity, and in particular: accidents, fatigue, sunstroke, dehydration, sexually transmitted diseases, verrucae, and other “exotic” diseases such as malaria and turista.
• To examine these problems by type, location, and length of vacation.
• To examine the specific problems of access to care for “acute” health events on vacation, or in cities that are empty in the month of August (as is generally the case in France).
• To study the changes in healthcare consumption behavior, specifically in chronic phenomena such as preventive medical consumption before vacations, hospitalization of the elderly during the vacation period, etc.

Test assessment
In quantitative terms, we gathered 585 complete case files out of a total 957 address files, which puts the success rate of 61%. This is significantly below the 66% of the other waves.

The shortfall is largely due to the most heavily urbanized regions: Nord-Pas-de-Calais and, principally, Île-de-France (Paris region). In the Paris region, the lack of available interviewers meant that we were unable to assign about 50 address files. In the five other regions, the increase in the refusal or non-completion rates was not significant, except for the non-completion rate in Midi-Pyrénées.

These relatively encouraging results seem partly due to the relaxation of the standard procedures for visits: interviewers were allowed to change dates or even skip visits for reasons beyond their control, and file transmissions to the medical team were more frequently postponed or even canceled.

The survey was conducted only in those areas where the Regional Office had nominally established that interviewers would be available during the summer.

Several of the seven Regional Offices, however, reported survey-management problems due to staff shortages in the vacation period. But opinions are fairly divided on this point.

In conclusion, the majority opinion among the test-survey participants is that it would be impossible to conduct a summer wave on a “normal” sample distributed at random across the primary units. The number-one problem is finding enough interviewers. To prevent such a shortage, the relevant departments would also have to be alerted well in advance, so that their employees could agree on staggered vacations and thus ensure a continuous survey management.

Lastly, the large number of long absences by households would probably require interviews of households at their vacation homes during the summer months.

The analysis published by CREDES compares summer morbidity and healthcare consumption with annual averages ([22]).
Limitations of the source
and of its use

Thus far, we have given a somewhat complacent list of all the projects accomplished thanks to the latest Health Survey. If, instead, we look at all the projects we were unable to complete, we have to admit a number of omissions.

Of the two goals set in 1990, two have been inadequately fulfilled. They concern the two main gaps in the coverage of the Ten-Year Surveys:

- The surveys have trouble covering the fringe groups, the poorly-housed, and the homeless. In fact, this is a general weakness of INSEE household surveys. Several studies have been conducted in recent years, notably under the aegis of CREDES, CREDOC, and—of course—of the National Council on Statistical Information (CNIS). These projects have addressed the specific health and healthcare- access problems of poor or low-income households. They have been kept entirely separate from the Health Survey itself. In future, the Health Survey should probably take advantage of these contributions to broaden its coverage (21).

- Another weakness is due to the survey method: by interviewing patients rather than healthcare providers, the survey is very

References


7. The remarkable series of trial surveys of the homeless, carried out by the National Institute for Population Studies (INED) on the initiative of CNIS were purely methodological in intent, and addressed very few health-related issues.
fragmentary when it comes to recording care, analyses, examinations, and other items of service dispensed during hospital stays. To fill this gap, CREDES performed a specific survey of hospital patients concurrently with the Health Survey, based on interviews with medical staff.

Despite these initiatives, the time and the resources were lacking to conduct a joint analysis of the data from these surveys and from the Ten-Year Survey. Only such a comparative approach would have enabled us to complete the study of social disparities in healthcare access.

There is even a problem in regard to primary healthcare, for which we have an irreplaceable source to estimate the consumption of healthcare in kind. The survey data offer an uncertain basis for tabulating these consumptions and assessing the shares paid by households, Social Security, supplementary insurance plans, and other benefit programs. If the household has disbursed only the unfunded portion of the expense, called the ticket modérateur, we cannot determine the full price of the healthcare provided; if the household has advanced the full price, the survey does not record the reimbursements accruing to the household in the future. To fill these gaps would require matching the individual survey data against the Social Security records. This would be a cumbersome and technically delicate operation, especially in view of the large number of social-insurance management organizations. It would also raise considerable privacy problems. An easier solution, no doubt, is to use the CREDES annual survey on “Health and Social Protection,” which covers a portion of the CNAMTS’s Long-Term Sample of Social-Insurance Beneficiaries (Échantillon Permanent d’Assurés Sociaux: EPAS).

Another set of shortcomings is linked to the “cross-sectional” or “period” character of the survey—as against a “cohort” or “longitudinal” approach. One of the main controversies concerning the alleged waste in the French health system focuses on the so-called “treatment sequences” (filières de soins). The individual healthcare logbook (carnet de santé) introduced in 1995 was intended, among other things, to provide a register of the patient’s medical history, and avoid the needless repetition of items of service already performed. Despite the exceptionally long data-gathering period of the successive Health Surveys, and despite the efforts in 1991-92 to identify sequences of healthcare consumption, it now seems clear that only a monitoring over one or more years would shed light on the “waste” issue. Meanwhile, aging-related conditions and chronic, progressive diseases account for an ever-greater share of health disorders and healthcare consumption. This trend makes it likely that, sooner or later, we will have to set up large-scale longitudinal surveys to track cohorts of individuals, as is done in demography. Cohort surveys would be the only way to estimate recovery rates—whether the recovery is due to successful surgery, as for cataracts and hip arthritis, or to a complex overall treatment, as in cancer.

A final deficiency is the virtual lack of reliable results at the regional level, not to speak of lower geographic echelons. The issue is becoming all the more relevant with the growing role of local authorities in health matters. The problem is a classic one in surveys, since survey costs are directly proportional to the sample size. To produce representative statistics for each département would entail an at least tenfold, and more probably twentyfold, increase in the total cost of the operation. Two approaches will have to be explored in order to meet a strongly voiced need:

(1) The use of individual data from the Social Security system, provided they can gradually incorporate morbidity—i.e., diagnoses—and the social characteristics of the insured and their households.

(2) The weighting of the national survey figures by all the structural data series available at the local level, including demographic data, social data, and even data on healthcare supply. This solution would be more economical and would allow a projection of the national data on a local scale.

Pierre Mormiche
Demographic Surveys and Studies Division
INSEE

Courrier des statistiques, English series no.4, 1998 35
The analysis of health statistics at INSEE

The Health Survey is the Institute’s main contribution to public knowledge of the medical status of the French population. The analysis of selected survey findings, the processing of data from other sources, and a theoretical approach influenced by general economic studies has enabled INSEE to build up its expertise in health economics. As Pascale Genier and Frédéric Rupprecht point out, the ongoing discussions on the reform of the French healthcare system have drawn extensively on this competence.

INSEE’s Redistribution and Social Policies Division is a part of the General Economic Studies Department. As this organizational arrangement suggests, the Division’s prime mission is not to produce statistics, but rather to use them. The economic analysis of the healthcare system is one of the main topics of study of the Division, formed in 1992. Through its admittedly small research staff,1 the Division brings the Department’s overall economic-analysis approach to bear on its work. The Division studies have enabled INSEE to build up an expertise in the area, which is now in demand for studies initiated by government departments and agencies involved in the health sector.

Analysis of INSEE surveys

An initial series of analyses based on the Health Survey addressed the issue of whether people consciously manage their «health capital.» The focus was on preventive medical consumption and more broadly on individual behavior in health matters.2 The first task was to determine the individual characteristics that predispose people to preventive medical consumption. Gender was found to be the most decisive variable, although age, health, insurance coverage, and education are also important. We later widened our field of study to all forms of behavior that have an incidence on health—including positive factors such as preventive medical examinations, weight-watching, and purchases of over-the-counter drugs, and negative factors such as smoking and alcohol consumption. Our aim was to test the assumption that all these behaviors might reflect a deliberate overall management of health by individuals. Using a range of statistical and econometric methods, we were able to show that, while preventive behaviors and pathogenic behaviors rarely coexist in the same person, the «behavior mix» could not be interpreted as an index of the person’s overall management of his or her «health capital.» By simply examining a few key determinants—such as gender—we can show that these behaviors are independent of one another. Alcohol consumers do not practice as much prevention as people who drink less than a glass of alcohol a day, but this merely reflects the fact that women drink less and are more prevention-minded than men. When we aggregate the two sub-populations—men and women—we find a negative link between alcohol and prevention that does not exist in either sub-population examined separately.

Two other analyses, based on the Health Survey data, deal with the consumption of preventive and curative healthcare. The first analysis focuses exclusively on individuals’ total consumption during the survey period. Its purposes are twofold: (1) to determine the individual characteristics that influence the likelihood of medical consumption and the number of consumption items; (2) to assess the impact of the density and local availability of medical supply on healthcare consumption. The second analysis is more ambitious as it examines not the total consumption during the survey period, but rather the succession of these consumptions. The goal here is to define «healthcare sequences,» i.e., to study the series of medical consumptions that form a «healthcare episode.» The episode is defined by an algorithm; ideally, it groups together medical consumption items that are generated by a single complaint and appear to be interlinked—because they are prescribed by a doctor in a consultation that belongs to the episode, or because a doctor has asked a patient to return for another consultation. This work calls for a careful methodological definition of the concepts of «healthcare sequences» and «healthcare episodes.» It also illustrates the abundance of information contained in the Health Survey, thanks to which we can reconstruct these «chains» of medical consumption.

1. At the time of writing (1996), the co-authors of this article.
Aid to the dependent elderly

In May 1996, the variable section of INSEE’s long-term Living-Conditions Survey was dedicated to local services. This included a heading on aid to the dependent elderly. Its analysis is in progress. The forms of aid are analyzed econometrically, then discussed in the light of responses to opinion questions. The study focuses on two aspects: (1) the probability of receiving different types of aid—formal and informal; (2) a more novel investigation to determine the respective share of each type. The emphasis is on the influence of economic factors (prices and income) and of the characteristics of potential aid-providers, notably the geographic proximity and availability of family members.

Exploiting other sources

The Economy and Finance Ministry’s Forecasting Directorate (Direction de la Prévision: DP) maintains a data base on the pharmaceutical industry. The base yields annual statistics on sales, prices, reimbursement rate, pharmaceutical company exploiting the patent, and so on. The figures are broken down by pharmaceutical product. Two studies have been prepared with the aid of these data.

The first study is dedicated to the industry structure: concentration, number of products marketed in France, sales ratios by product and by company. The study found: (1) a contrast between the highly fragmented structure of the industry as a whole and the high concentration in some product classes; (2) the dependence of drug firms on their main product. The pharmaceutical companies have a large portfolio of marketed preparations—about twenty on average—but generate half their sales from a single product.

The second study measures the impact of R&D investment on the number of new-specialty introductions and sales. The initial findings are fairly unexpected. They partly contradict the logic behind the wave of mergers and acquisitions that has swept the industry since the early 1990s. The results suggest that one does not have to be a large company to develop new—or even pathbreaking—molecules. This conclusion was reached using sophisticated econometric methods, in particular the pseudo-maximum likelihood technique. Beforehand, a massive statistical operation was required to prepare the data, since the different sources had no common variable. The sources included corporate income-tax files, the Ministry’s Research Survey, and the Forecasting Directorate (DP) data base. To harmonize these sources, the authors added the SIRENE code to the names of the companies in the DP data base. The coding raised many problems owing to the continuous changes in the pharmaceutical industry—modifications in the corporate legal status of individual firms, mergers, acquisitions, incorporation into new international conglomerates, etc.

The OECD Health data base contains annual series on 25 member countries of the Organization for the period 1964–94, including: doctors/population ratios; the ratio of health spending to gross domestic product (GDP); and drug consumption in local currency, U.S. dollars, and purchasing power parity (PPP) dollars. The base has been used as a starting point for in-depth studies on health systems in other countries (Germany and U.K.) and for cross-sectional econometric analyses.

The latter studies have highlighted the positive link between GDP and health spending. According to this macroeconomic approach, healthcare is a luxury good, but this result does not necessarily apply to individuals. The cross-sectional analysis emphasizes the many disparities between countries in regard to healthcare supply as well as consumption. These disparities have, in fact, complicated the interpretation of the econometric results.

An analytical expertise in health economics

The reform of the French Social Security system initiated in 1996 led to the creation of inter-departmental task forces in the public-health sector and to research projects on specific topics. At the request of the Minister of Labor and Welfare and the Junior Minister for Health and Social Security, INSEE’s Statistical and Accounting Standards Department prepared a report under the supervision of the Institute’s General Inspectorate. The report examined the statistics on the issues relating to price measurements. The findings led to recommendations aimed at improving and harmonizing the data sources on the pharmaceutical industry. As a member of the inter-departmental task forces, the INSEE Department took part in the Ateliers de l’Officine, a review body set up to examine the retail pharmaceutical trade. This joint...
effort led to the drafting of a set of indicators to monitor trends in drug retailing.\textsuperscript{11}

Following a call for research-contract bids, the government Planning Commission (Commissariat Général du Plan) asked the National Institute for Population Studies (INED) and INSEE to work on a project called «Microsimulation and assessment of health policies.» The goals are: (1) to describe the range of microsimulation models used to analyze the health system and the dependent persons’ benefits system; (2) to prepare microsimulations in each of these areas in order to shed light on specific issues. In the health sector, the project will simulate the impact on healthcare consumption patterns of the introduction of a mandatory initial visit to a general practitioner. As regards dependency benefits, the aim is to provide a long-term assessment of the incidence of the changes in family structure and in incomes on (1) dependency-related needs and (2) the public or family aid potentially available to elderly people who are losing autonomy.

\textbf{Developing new theoretical tools}

The studies described in this article give an idea of the Division’s work on health and dependence issues. The emphasis has been on empirical research, but this has led to analyses of a more theoretical nature. For instance, the theme of old-age dependency has prompted an examination of the roles of the family, the private sector, and the State, as well as of the issue of fairness in the public coverage of dependent persons’ expenditures.\textsuperscript{12} The work on the behavior of the French in regard to their health has led to a reflection on the concepts of «interest in health» and «value of human life.» The links between economic growth and health have been studied in the framework of an endogenous growth model:\textsuperscript{13} like education in the developed countries, health is a growth engine in the developing countries. This is consistent with the theory of human capital.

\textsuperscript{11} In partnership with INSEE’s Wholesale/Retail Trade Division.
\textsuperscript{12} See «Économie de la santé et équité: compte rendu des XVIIIèmes Journées des économistes français de la santé,» Courrier des statistiques no. 79-80, December 1996.
\textsuperscript{13} This research was discussed in a paper at an AIDELF conference (Association Internationale d’Économistes de Langue Française: International Association of French-Speaking Economists).
The «Sentinelle» network
Surveillance of communicable diseases in France

The «Sentinelle» network, described here by Benoît Riandey, is an interactive computerized system for the surveillance of communicable diseases. It relies on 500 general practitioners (GPs) evenly distributed throughout metropolitan France, i.e., the mainland and Corsica. In the language of survey specialists, «Sentinelle» may be described as a continuous survey of communicable diseases among the patients of a 1/100 sample of French GPs—in other words, as a proxy for a cluster survey.1

Before describing the network, we would like to outline the concept of communicable-disease surveillance, as summarized by Pierre Chauvin, co-administrator of «Sentinelle.» The registration of deaths was practiced as early as the sixteenth and seventeenth centuries in London and in Marseille, initially for the purpose of monitoring the plague. Summarizing 130 years of observations, John Graunt compiled the first mortality table in 1662 and thus became the founder of scientific demography. The modern concept of communicable-disease surveillance was defined in the early 1950s by the Centers for Disease Control in the United States. The term designates the continuous and comprehensive process of gathering, compiling, and analyzing data on communicable diseases, as well as disseminating the data to all those who have helped in their collection and to all those who need to know. This very broad definition applies to the surveillance of all health phenomena (pathological or not) in any population (general population or a sub-population). Examples include communicable, chronic, and occupational diseases; perinatal mortality; environmental risks such as pollen allergies; vaccination coverage, and so on.

A surveillance system may have different kinds of goals: (1) description: identifying an epidemiological situation; (2) assessment: measuring the effectiveness of a prevention program; (3) research: supplying data to develop new analytical methods; (4) warning: detecting unusual or critical events. The choice of goal dictates the choice of surveillance method: comprehensive surveillance, or surveillance of a sample, which can be random or voluntary.2 Either type may be active or passive, and rely on the services of different categories of observers: general practitioners (GPs) or specialists, medical-analysis laboratories, hospital emergency rooms, cancer records, compulsory reporting of diseases, etc. The so-called comprehensive methods are often, in fact, insufficiently comprehensive: owing to the lack of motivation on the part of «forced» observers, they can be unrepresentative and the diagnoses recorded can be imprecise.

By contrast, the “Sentinelle” network, administered by Antoine Flahault and Pierre Chauvin,3 enjoys a high level of network-member motivation. “Sentinelle” is France’s only national, public network for epidemiological surveillance based on a sample of medical practitioners. Its mission is to produce, process, and disseminate general medical information on: common diseases such as flu, measles, diarrhea, and chronic bronchitis; tracking of AIDS and hepatitis C; prevention of sexually transmitted diseases; vaccinations, etc. The network has been operating since 1984 at Unit 444 (formerly Unit 263) of the French National Institute for Health and Medical Research (INSERM). The unit, called «Epidemiology and Information Science,» is headed by A.J. Valleron and is supported by the National Public Health Network (RNSP) and the Health Ministry’s Directorate General for Healthcare (DGS). The 500 GPs participating in the network do so in a volunteer, unpaid capacity (map 1).

Network operation

Participating GPs use a “Minitel” videotext terminal (screen phone) or PC modem to log on to the INSERM Oracle data base at least once a week. They report the number of

1. This article is based on the transcript of an National Institute for Population, Studies (INED) seminar of January 30, 1996, edited and updated for publication. The INED seminar on survey methods is organized by Benoît Riandey, scientific consultant, ans Henri Léridon, senior researcher (directeur de recherche) at INED. It is held once a month, generally on a Tuesday, at the INED building, 27 rue du Commandeur, 75675 Paris Cedex 14, France. For further information, contact: Françoise Schmitt, phone +33 1 42 18 20 09 fax +33 1 42 18 21 92 e-mail schmitt@ined.fr
2. The “Sentinelle” system is a special case of voluntary sample surveillance.
3. Contact: INSERM U444, 27 rue de Chaligny, 75571 Paris Cedex 12, France.
cases of the monitored diseases diagnosed since their previous connection, along with the patients’ characteristics. A five-minute call a week is generally sufficient. The workload is therefore light, all the more so as a summary logbook is provided to reduce memory efforts and errors. A series of highly useful one-time surveys bring some variety to the task. For example, a case/control survey (500 cases, 500 controls) was carried out with the aim of explaining the recurrent January peak in diarrhea outbreaks. The survey concluded that the likely cause was the rotavirus, and ruled out the consumption of raw shellfish as the source. Other one-time surveys recently addressed such topics as anxiety treatments, insurance coverage for patients in financial hardship, and diagnostic and therapeutic approaches to chronic bronchitis.

In exchange for their help, the “sentinel doctors” have access to the network team and receive a weekly bulletin via the Internet and Minitel, plus a quarterly comparison of their data with those of their region. A quarterly newsletter, Sentinelles, is circulated to all of France’s 60,000 GPs. Articles on the network appear in medical and scientific journals. The results are stored in a data base freely available on the Internet. The base can be used to generate tables, charts, and maps. These are not pre-stored owing to the multiplicity of potential requests. The mathematical and map-making software programs are automatically activated with each hit on the Web server.4

The system is effective because it offers a genuine feedback for the information-providers as well as researchers, decision-makers, and the public. A motivation survey of «sentinel doctors» showed that 40% of them are primarily motivated by a desire to take part in a public-health initiative, 25% by their professional interest in epidemiology, and the remainder by an interest in general-medicine networking and local and regional epidemiology.

The study of the compliance rate shows that the interest in general epidemiology stimulates compliance, whereas an interest in local epidemiology does not. The most compliant participants are young doctors and GPs with over 20 years’ practice. If we define a non-compliant participant as a sentinel doctor who has exceeded the 12-day interval between connections four times (not counting his or her announced absences), the median compliance interval is one year. For four delays of more than one month, the median rises to three years. A supplementary, interview-based qualitative survey found that the network plays a role—at least on a token level—as a self-assessment tool and as a source of evidence on general-medicine practices.

Every week, 10-25% of participants fail to respond despite reminders. In 11 years, 1,900 GPs have taken part in the network. The organizing team is therefore keen to preserve participants’ loyalty, while working to ensure the sample’s representativeness. The problem here is that, in the long run, extreme loyalty may result in the selection of atypical GPs. The seniority profile is an index of this potential bias. The GP panel is not refreshed at regular intervals by seniority category, as the classic sampling orthodoxy would require. The reason for this is that the organizers do not want to exhaust the pool of potential volunteers. The strong motivation of existing network members must not inhibit the organizers from arranging regular replacements. In addition to a nationwide recruitment drive, «Sentinelle» conducts prospecting campaigns in each département.

The only geographic representativeness criterion used is the weekly weighting of observations, which serves to maintain the sample’s balance between départements. The estimation of the true denominator—namely, the population covered by one GP—is hard to establish in the French health system: patients are not obliged (yet) to consult a GP first, there is no patient list, and the French have a high tendency to switch doctors. A comparison between sentinel doctors and GPs in general will be made for each département, using the medical-activity statistics of the sickness-insurance fund. This exercise should yield a more

precise estimate of participants’ representativeness.

Other comparisons, however, make it possible to assess the network’s efficiency. The annual estimate of 3.3 million cases of flu is comparable to the figure obtained in the INSEE-CREDES Ten-Year Survey on health and medical consumption. On the other hand, chickenpox cases are underestimated by about 15% because many are observed by pediatricians and thus go undetected by the network. These statistical
checks tell us about the network’s representativeness, but also about the quality of the information captured. The information is continuously validated by contacting all the extreme deciles in the responses provided.

Some significant network findings

Like diarrhea, the flu displays a sharp peak every year (see illustration on next page) but at a highly fluctuating date between October and April. Each flu epidemic spreads along a distinctive path closely linked to the country’s highway network, as clearly shown in maps 2.

The network data put the number of persons contaminated by the hepatitis C virus at 500,000 rather than the 2 million initially thought. Despite apparent collapse in the number of measles cases following a recent mass vaccination, the number of potential victims remains substantial. The eradication of the disease will require the vaccination coverage to be increased and kept high. In a related development, the network is evaluating the performance of a saliva measles test to confirm suspect and atypical diagnoses by primary-care physicians.

Ninety-five percent of people catch chickenpox before age 20. There are suspicions of a link between chickenpox and shingles. What is the risk, therefore, that widespread vaccination against chickenpox might postpone the outbreak of the disease to older ages when complications are more common?

Such questions are of great interest to GPs. But medical research is largely dedicated to topics dealt with by specialists—in particular, rare diseases. One of the original features of the «Sentinelle» network is that it deals with common diseases, most of which are treated by primary healthcare practitioners.

**References**


Sixth international conference on healthcare systems

Barcelona, September 16-20, 1996

The international conference on health systems is held every four years under the aegis of System Science Health Care (SSHC). The Barcelona conference was therefore the last event before year 2000. Logically enough, it focused on the ways to prepare health systems for the challenges of the twenty-first century.

The conference was distinguished by the impressive number of papers and the presence of many participants from Latin America. There were four plenary sessions, 47 parallel sessions, and four «poster» sessions.1 It is impossible to give a brief summary of such an abundance of material. In this article, we will concentrate on the papers dealing with the changes in health systems and the impact of these changes on the pharmaceutical industry.2

Recent and future changes in health systems

All health systems around the world are faced with a severe financial constraint. Each system tries to manage the constraint with its own methods, but all the systems are examining an approach based on an overall budget with unrestricted allocation of resources among the different categories of providers. These two common features produced the conference’s most clearcut finding: health-system goals are converging, but gaps persist in the choice of methods to reach them.

According to several participants, the convergence is partly due to peer control, which is a consequence of the spread of communication technologies—notably the Internet. By contrast, cultural differences—for example, heavy intervention by a welfare State—explain the persistence of disparities between systems. There is no «miracle» health system that would work in all countries and would allow optimal resource allocation everywhere. All we have are broad policy directions that countries are trying to pursue at sometimes very different paces and with diverging—and even opposite—means. For example, France uses co-payment, while Canada does not. Some countries, including France, pay practitioners for each item of service provided, while others, like Britain, prefer a per-capita payment.

A dominant theme of the discussions was the introduction of competition into health systems. The role of the welfare State, it is argued, should be redefined in order to encourage private initiatives and allow the free play of market forces. The State should no longer be the only entity in charge of health-system management. Healthcare professionals and private insurance companies should also be involved. The recent revamping of Britain’s National Health Service (NHS) illustrates this new approach. The reforms included the adoption of the gatekeeper principle—a general practitioner who screens access to the healthcare system and directs the patient toward the most suitable healthcare provider. The gatekeeper is a characteristic of our future health systems that is designed to cope with the introduction of market mechanisms.

Health systems need to adapt more efficiently to advances in medical science. They must display a greater ability to integrate therapeutic innovations—such as biotechnologies—that are ever more complex and costly. Several speakers emphasized that the private sector was more efficient than the public sector in this area.

The welfare State should not, however, be totally excluded from health-system management, especially in countries with sharply unequal access to healthcare. The example of the United States is striking. The emergence of a powerful private health insurance system—the Health Maintenance Organizations—admittedly has many virtues due to its managed-care approach. Yet it is inequitable. Some 20% of Americans have no form of health insurance whatever. There is an urgent need to define a minimum, State-funded healthcare package for the neediest: this was the final theme of the conference.

Participants saw the health systems of the coming decades as more decentralized, incorporating market mechanisms derived from the private sector, but still regulated by an ever-present welfare State. The

1. In «poster» sessions, several participants display their findings on a bulletin board without oral presentations. Discussions take place directly between bulletin-board readers and the authors present.
2. The eight sessions on Latin America and the transition economies are not discussed here. Abstracts of all papers are available at the Web site http://sshc96.datalab.es.
Regulating healthcare demand in the developing countries

The future trends in healthcare systems discussed at the conference mainly concerned the industrialized countries. Participants agreed that the reform efforts in these economies will focus on the hospital sector. In the developing countries, by contrast, the units in most urgent need of improvement are primary care centers. The Bamako initiative of 1988 introduced the concept of co-payment by patients for the use of the healthcare system. This approach aims at loosening the budgetary constraints on the developing countries and at promoting an improvement in the quality of care. Two case studies presented in Barcelona, on Uganda and Chad, reached similar conclusions: attendance at healthcare centers decreases significantly after the introduction of co-payment. Moreover, it is the most destitute who find themselves excluded from the system. This raises the issue of fairness in cost-covering methods. Compensatory mechanisms are needed to enable even the poorest patients to access primary care centers. In essence, this concern echoes one of the main preoccupations of the welfare State in the healthcare systems of industrialized countries.

One way to target the neediest patients would be to give them vouchers for the purchase of healthcare. A study in Nicaragua found that this method produces broadly satisfactory results. The system preserves the principle of competition between healthcare producers, since patients will attend the centers that offer the lowest prices in voucher terms; at the same time, the system does not undermine the co-payment principle, since the vouchers are free only for the poorest patients. Voucher aid is preferable to direct financial aid, since it can be used only for the consumption of healthcare—provided that measures are taken to prevent the creation of a black market.

British example illustrates this trend. It is being followed by countries that have already undertaken, or are about to carry out, major reforms—notably France. The 1991 reform of the NHS created a separation between healthcare purchasers and producers. Regions and general practitioners, known as GP fundholders, control funds allocated by the central government in proportion to the number of inhabitants under their responsibility. Secondary healthcare producers—hospitals in particular—can apply for «trust» status, which qualifies them as private enterprises. This distinction allows suppliers to compete and rationalizes production. Hospitals must cut costs in order to sell their care to regions and fundholders. Two of the first positive effects of the reform were a reduction in hospital waiting lists and an increase in patient satisfaction. The reforms under way in the Dutch hospital system are also aimed at a greater decentralization, along with a change in hospital organization. The hospitals are adopting private-enterprise principles. They control their operating costs, in particular by subcontracting services to the private sector through competitive bidding, and they regard patients as customers who are liable to move to another healthcare center if they are not satisfied. The planned introduction of competition between hospitals is likely to hasten this trend, since the quality of care will have to increase simultaneously with a fall in prices in order to satisfy patient-customers. The initial assessments of the efficiency of the Dutch hospital system after the partial implementation of these reforms suggest that the results are satisfactory.

The future of drugs in health-system evolution

Drugs are a separate sector of health-system management, because the healthcare producers (the pharmaceutical companies) and the providers (practitioners) are not the same. Moreover, the drug sector is on the leading edge of change, as it already incorporates powerful market mechanisms. This is especially true of countries where pharmaceutical prices are unregulated, for example in France for drugs used in hospitals. The convergence between systems is also well under way in the drug sector because of the growing globalization of the pharmaceutical industry, and the emergence of international prices.

The regulation of drug expenditures in the European Union clearly illustrates this harmonization, sometimes accomplished under the pressure of the major international pharmaceutical firms and of intra-EU trade flows. However, given the sharp differences in production, regulation, prescription, and consumption, the convergence toward a single European drug market will surely take time.

Regulations diverge in two areas: price control and reimbursement. Several countries, such as Germany and the Netherlands, have lifted price controls. Others, like Italy and France, prefer regulated prices (in France, however, the situation has changed considerably in the past decade, with the successive abolition of price controls on hospital drugs and on non-reimbursed pharmaceuticals). A third group of countries, notably the U.K., has opted to regulate the profits of the pharmaceutical industry. These disparities create price differentials: drugs are far cheaper in countries where prices are controlled than in those where prices are deregulated. As regards reimbursements. France has adopted the principle of the ticket modérateur, or «deductible»—i.e., a predetermined percentage of the drug price that is not refunded to the patient. In the U.K., patients are required to pay a high flat fee per prescription item. Germany adopted the system of «reference prices» (Festbeträg) in 1989. Broadly speaking, patients are reimbursed on the basis of the price of the
cheapest drug in a class of therapeutically comparable products.

The disparities in production are significant but are becoming less so thanks to the globalization of the pharmaceutical industry. Northern countries, such as Sweden and the U.K., have powerful domestic drug industries—particularly as regards their innovation performance—whereas some of the southern countries like Italy have weaker pharmaceutical sectors.

Consumption and prescription patterns, as well, vary from one country to another. France is a heavy consumer of anti-hypertension drugs, while the U.K. and Italy consume large quantities of anti-ulcer products.

Despite these largely historical differences, many resemblances are gradually emerging. The prescription of generic drugs is gaining ground in most EU countries, which are all preoccupied with cost-cutting. However, while the goal is a common one, the methods being used to attain it differ: they include giving pharmacies the right to offer substitutes, a reference-price system, a prescription quota for physicians, and so on.

To hasten the dissemination of therapeutic innovations and reduce management costs, the European Medicine Evaluation Agency (EMEA) issues European licenses to market drugs, a procedure that has the added advantage of promoting the introduction of a European price for new specialty drugs. Price differentials are thus gradually narrowing, at least for new products. This harmonization is made necessary by the rising flows of «parallel» trade handled by import-export companies taking advantage of price differences between EU countries. Parallel trading—facilitated by the advent of the single market—is forcing price discipline on companies that are losing market share in the countries where they generate the highest profits.

In conclusion, the conference produced a consensus among the economists, healthcare producers, and regulators in attendance from around the world: the health systems of the next century will introduce market mechanisms regulated by public authorities. Each country will do so with the means most consistent with its historical tradition. The common purpose of this evolution will be to achieve a better control of rising costs and expenditures—but without neglecting social equity.

Frédéric Rupprecht
Redistribution and Social Policies Division
INSEE
(at the time of writing)
## Advance Release Calendar

### Contact person
Chef du Bureau de Presse  
Institut National de la Statistique et des Études Économiques (INSEE)

### Phone
33 1 41176895

### Internet e-mail

### Data Category (and, if different, national descriptor) | Date of last calendar release (mon/dd/yy) | Calendar flexibility | Notes | Release* |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Real sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production index (Indice de la Production Industrielle)</td>
<td>12/28/98</td>
<td>1/</td>
<td>22 (11 98)</td>
<td>26 (Q4 98 (preliminary))</td>
</tr>
<tr>
<td>Labor market: Employment (Emploi Salarié)</td>
<td>12/28/98</td>
<td>1/</td>
<td>19 (12 98)</td>
<td>19 (01 99)</td>
</tr>
<tr>
<td>Labor market: Unemployment (Chômage)</td>
<td>12/28/98</td>
<td>1/</td>
<td>26 (Q4 98 (preliminary))</td>
<td>12 (Q4 98 (final))</td>
</tr>
<tr>
<td>Labor market: Wages/earnings (Salaires (TSH et SMH))</td>
<td>12/28/98</td>
<td>1/</td>
<td>26 (Q4 98 (preliminary))</td>
<td>30 (Q4 98 (final))</td>
</tr>
<tr>
<td>Price indices: Consumer prices (Indice des Prix à la Consommation (IPC))</td>
<td>12/28/98</td>
<td>1/</td>
<td>30 (12 98, 12 98 (preliminary), (final))</td>
<td></td>
</tr>
<tr>
<td>Price indices: Producer prices (IPVI - Indice des prix de vente industriels)</td>
<td>12/28/98</td>
<td>1/</td>
<td>1 (12 98)</td>
<td>2 (01 99)</td>
</tr>
<tr>
<td>Fiscal sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General government or public sector operations (Comptes des Administrations Publiques)</td>
<td>1/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central government operations</td>
<td>2/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central government debt</td>
<td>2/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analytical accounts of the banking sector</td>
<td>2/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analytical accounts of the central bank</td>
<td>2/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest rates</td>
<td>3/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stock market: Share price indices</td>
<td>3/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>External sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balance of payments</td>
<td>12/28/98</td>
<td>1/</td>
<td>14 (10 98)</td>
<td>12 (11 98)</td>
</tr>
<tr>
<td>International reserves (Réserves officielles de change de l'Etat)</td>
<td>12/28/98</td>
<td>1/</td>
<td>8 (12 98)</td>
<td>12 (01 99)</td>
</tr>
<tr>
<td>Merchandise trade (Commerce Extérieur)</td>
<td>12/28/98</td>
<td>1/</td>
<td>19 (11 98)</td>
<td>17 (12 98)</td>
</tr>
<tr>
<td>International investment position</td>
<td>2/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exchange rates</td>
<td>3/</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Release dates can be specified as a specific date, a range of dates, or a no-later-than (NLT) date. The period (or date) to which data to be released relate is shown in parentheses.

1/ Release dates for December are final. Those for January, February and March are tentative.

2/ An advance release calendar that meets the requirements of the SDDS will be disseminated by the end of the transition period.

3/ Not applicable. Daily data are available daily.

All dates are expected dates of release and are subject to change.

[Data categories for France]
[Information by country] [DSBB Home] [Information by data category]
...or how the International Monetary Fund is working to improve the quality and user-friendliness of key macroeconomic statistics

Statistics have long played an important role in social debate, and it is well known that, even if they are produced with the utmost rigor, their use is not necessarily neutral. In fact, there is a widespread skeptical feeling that a figure—or a way of presenting it—can always be found to support any argument.

For a long time, the erroneous use of a figure or the alteration of its significance had few consequences for the person who committed the error. However, times have changed, as more and more decisions with immediate and significant effects are based directly on disseminated data.

The International Monetary Fund (IMF) is well aware that the financial markets, which have developed to an extraordinary extent in the past fifteen years, require rapid and reliable information, and are likely to sanction those countries that do not provide it. This situation prompted the IMF, in cooperation with member countries, to define quality standards for macroeconomic statistics and to set up a system providing «information on information»—what the IMF calls «metadata.»

When they log on to the «http://dsbb.imf.org» site on the Internet, many statisticians working at INSEE or in the public statistical system will find detailed information, in English, on some of the series to which they contribute. This is the result of the August 1996 decision by the French Ministry of Economy and Finance that France would participate in the initial phase of the establishment by the IMF of a system of dissemination standards called SDDS.

What is SDDS?

SDDS is the acronym for Special Data Dissemination Standards. It is a system of incentives and information designed by the IMF to improve the quality of statistics and to facilitate the use of the key macroeconomic data that the IMF deems most relevant to assess a country’s situation. To achieve these objectives, the IMF uses two approaches: (1) it proposes quality standards for about twenty groups of macroeconomic statistical series; (2) for countries that agree to comply with these standards, it publishes—on a worldwide electronic bulletin board—harmonized information on the preparation and dissemination of these series.

These quality standards were established by the IMF after consultation with statisticians in many countries. They cover the primary aspects of the production and dissemination of the series selected:

- The nature, content, coverage, detail, etc., of the series must be such that they can be used for the latest forms of macroeconomic analysis.
- The periodicity and timeliness of data dissemination must be sufficient to allow the assessment of a country’s economic situation. The rule adopted by the IMF is that all monthly data must be available in the following month, and all quarterly data in the following quarter.
- Release calendars issued in advance and embargo rules must enable analysts to work on an equal footing: this is to prevent market dysfunctions.
- The transparency of data compilation methods and of special-access privileges for political authorities must be sufficient to limit the risks of manipulation and thus establish the credibility of the published figures.
- Information on data-dissemination conditions must be full enough to enable any interested analyst anywhere in the world to obtain the desired series—generally for a price—as soon as they are made public.
Overall, the standards—which are based on the best prevailing practices—are very strict. Indeed, at first, no country was able to meet all of them. Consequently, under pressure from countries, the IMF agreed to a small number of waivers for a two-year transition period in exchange for commitments to meet the standards as quickly as possible. Even so, only about thirty countries—most of them OECD members—participated in the start-up of the system. Once the system is fine-tuned with these «star pupils,» the IMF plans to propose more lenient standards for emerging countries, whose statistical systems prevent them from meeting the current SDDS (for example, because they do not prepare quarterly accounts). The Fund also hopes that the number of statistically developed countries that agree to participate in the SDDS will increase by end-1998. Countries that resist will, in the IMF’s view, find themselves penalized by the financial markets, which will charge an additional premium on interest rates for lack of statistical transparency.

An important aspect of the SDDS must be emphasized. As it stands, the system provides access not to a database, but rather to a meta-database—that is, the harmonized dissemination of information on data for each of the series selected and each participating country. The IMF believes this information should help economic and financial analysts to better assess country risk and thus reduce the likelihood of their being surprised by far-reaching monetary crises such as the Mexican currency crisis of winter 1994-95.

**Which series are involved?**

The statistical series to which SDDS-participating countries must apply strict standards are macroeconomic series that relate to the real sector, fiscal sector, monetary and financial sector, and external sector.

The real-sector series include:

- Series from the quarterly national accounts, essentially the «GDP Table» by value and by volume (or price), and some institutional unit accounts.
- Quarterly series on the labor market: employment, unemployment, wages/earnings.
- Monthly production indexes (for example, industrial production): the Fund regards these as forward-looking indicators of general economic activity as tracked by GDP. France, supported by the other European countries, obtained the inclusion in this category of the results of monthly business surveys of industrial enterprises. However, as such surveys do not yet exist in all countries—even in developed countries such as the United States—their inclusion in the SDDS is simply encouraged, as is the inclusion of other possible forward-looking indicators.
- Monthly price indexes: consumer prices and producer prices.

The fiscal series include:

- Annual series on government or public-sector transactions recorded in the annual national accounts (for example, general-government accounts).
- Quarterly series on government debt.
- Monthly series on budgetary developments: revenue, expenditure, financing.

The series on the monetary and financial sector include:

- Monthly series to monitor the accounts of the central bank: reserves, outstanding credit, external position.
- Daily series on interest rates and stock markets.

The external-sector series include:

- Annual series on inward and outward investment.
- Quarterly series on the balance of payments.
- Monthly series on foreign-exchange reserves.
- Monthly series on trade (exports, imports) by value.
- Daily series on the exchange rate (spot and forward).

An annual population series is used to convert aggregate figures to per-capita figures.

For each of these fields, a minimum level of detail is prescribed; greater disaggregation—by product group, for example—is encouraged.

**What’s on the Internet?**

The IMF posts «metadata» for the above series on its Web site, so anyone with Internet access can retrieve the information anywhere in the world at minimum cost.

This service has been named the DSBB or Dissemination Standards Bulletin Board, and its Web address is http://dsbb.imf.org.

The DSBB is organized by country. For France, there are currently some 125 screens providing three categories of information:

1. General information: Index of Data Categories; Summary Page on France’s Observance and Transition Plan; Coverage; Periodicity; Timeliness.
2. The Advance Release Calendar must be updated at the end of each month: series-release dates and times are firm for the following month and tentative for later months.

3. For each group of series, about five pages of general information on the data: coverage; periodicity and timeliness; conditions of public access (advance release calendar, simultaneous release to all interested parties); integrity—i.e., degree of confidentiality, privileged access for government authorities, independence of statisticians in their comments, advance notice of changes in methodology; and two headings to help assess data quality, specifically by indicating how any interested party can find out about the methods used.

In addition, the series dissemination formats are briefly described, enabling any interested party to obtain them as soon as they are published (for the financial markets, even minutes can matter\(^1\)).

An additional subset of information, «Summary Methodology,» gives more specific details on data-production methods. The subset is compiled for each data category and should gradually be included in the DSBB. The reader should be aware of the difficulty of providing information on this subject that is concise, relevant, and sufficiently comparable between countries.

**How is the SDDS organized in France?**

In France, three different institutions supply data for the SDDS: the Bank of France covers monetary and financial statistics; the Treasury is responsible for all fiscal data; and INSEE handles all non-financial, i.e., real-sector, data. The Institute works with DARES2 for wage data (and, indirectly, labor-market data) and with Customs for trade statistics. INSEE is also responsible for the monthly updating of the advance release calendar, which should cover all French series by the end of the transition period.

These data are e-mailed to the IMF Statistics Division, which is in charge of implementing and operating the SDDS and DSBB. The SDDS coordinator at INSEE is the Head of the Department of Short-Term Economic Analysis. The Institute’s Public Affairs Unit and Press Office are also involved in all aspects of dissemination, particularly the monthly preparation of the release calendar. The statisticians and public accountants who compile the series included in the SDDS are naturally responsible for all information on the series posted on the DSBB. In particular, they must ensure that any change of definition or method used in preparing the series is duly reported in advance in the release calendar and that the information on the DSBB is amended accordingly.

The official French representation to the IMF in Washington played an important role in the initial round of talks on the SDDS. It is empowered to intervene directly with IMF officials in charge of the SDDS, in the event of major difficulties in system implementation, especially at the end of the transition period.

**What can the SDDS contribute to the French statistical system?**

SDDS introduction clearly carries a cost for the participating countries, notably in terms of time spent compiling and preparing, in English, the information included in the DSBB under the IMF’s strict guidelines. Even when the system reaches cruising speed, there will be a need to update data and to monitor standards compliance.

What the Fund hopes to accomplish has been briefly outlined above. But do the national statisticians themselves stand to benefit from the services they provide to the system? INSEE management thinks that they do, for several reasons:

- Having to codify metadata has proven to be a useful task. True, all statisticians have a great deal of information—in their heads or filing cabinets—on the series they compile, but all too often this information is too diffuse, too eclectic, too sporadically updated, and too difficult to transmit quickly to whoever might request it. Now, with the DSBB, we have a mini-dictionary of statistical data.

- Individual compilers know their own series very well, but they are rarely as familiar with the equivalent series produced abroad. Admittedly, in the case of the European countries, Eurostat’s efforts to harmonize and circulate statistical data are starting to bear fruit. With the DSBB, anyone can now easily access the records prepared by foreign colleagues. Thanks to this readily comparable information, we can expect not only more openness to the outside world, but also an incentive to explore in greater depth those operations that seem to be done more efficiently or more intelligently in other countries—and to use this knowledge to improve how they are done at home.

- IMF standards for SDDS are ambitious. Even though some of them may seem unattainable in the short and medium term, they clearly indicate the direction in which progress must be sought. The availability of consistent international data can reveal the areas where such progress is more likely.

---


IMF integrity requirements are sure to please statisticians. To begin with, the value of their products is clearly recognized. If equal access to statistics for all users around the world is essential, it is because this statistical knowledge is an asset in the economic competition in which the financial markets have become the players and the referees. Moreover, by insisting on compliance with these standards, including by economic policy-makers, the SDDS helps to protect the intellectual autonomy of statisticians and thus contributes to the professional rigor of their work.

In sum, the system of standards and information dissemination on the Internet established by the IMF in 1996 is a step toward the globalization of statistical information. The SDDS will operate in a transition phase until 1998. Until then, the Fund will simply draw the attention of participating countries to any failure to observe the standards. At end-1998, countries must indicate whether they subscribe to the final system. Subscription is a binding commitment, and any country whose failure to comply with the standards cannot be justified by exceptional circumstances faces expulsion from the system. For statisticians, this undertaking is a technical challenge, but also an additional guarantee of their professional independence.

Pascal Mazodier
Inspection Générale
INSEE
E-mail systems are gradually being set up in all French government agencies. Each organization is choosing the technical solutions best suited to its needs, but, when it comes to launching the system and ensuring its general adoption, our various experiences have a lot in common. Yves Le Rolland’s concise and lively account of the Foreign Ministry’s person-to-person messaging system will have a familiar ring to INSEE staff responsible for setting up the Institute’s e-mail: they will recognize many of their own problems and difficulties—and the satisfaction that came from solving them.

The French Foreign Ministry maintains central offices in Paris and Nantes and more than 300 embassies and consulates around the world. It is therefore heavily dependent on long-distance exchanges of information. We hardly need to emphasize the importance of diplomatic dispatches, a genre in which some of France’s finest prose-writers this century have excelled.

Since the early 1980s, the Ministry has become a high-volume user of electronic messaging systems. Initially, it developed its own secure system for transmitting diplomatic dispatches (box p. 52), followed by function-dedicated systems, in particular for visa processing.1

A network that is going global

Diplomatic e-mail is used for non-confidential transfers of messages or more elaborate computerized documents (such as Word files or Quattro Pro spreadsheets) directly between staffers, from PC to PC. The basic software used is CC:Mail, to which the Ministry has added the following functions:

- Real-time display of news-agency dispatches (ex. Agence France Presse) in public bulletins.

- A facility for exchanging e-mail with remote correspondents who are connected to other messaging systems such as X400 or the Internet.

- A facility for including a fax number in the list of recipients. The message is then printed out like an ordinary fax even if it includes a Word document as a file attachment.

This service is gradually being made available to all Ministry employees and some of their colleagues in other government departments—such as the Overseas Development Ministry (Ministère de la Coopération) and the Treasury—that operate units housed in French embassies and official representations abroad. For this reason, the system is commonly referred to as the «diplomatic messaging» service. It comprises more than 3,500 subscribers in the four central administration offices and in 22 locations abroad—in particular, the permanent representative offices at the European Union in Brussels and the United Nations in New York, and the Washington, Bonn, Ottawa, and Rome embassies. Implementation is proceeding in step with that of PC networks and office-software servers in embassies and consulates. Streamlined systems have been set up to connect sites that lack such an infrastructure. Nearly all of France’s diplomatic missions abroad should be connected by 1999.

A network that demands daily administration

Unlike with a software application such as Word, it is not enough to copy the Ministry’s e-mail program onto users’ PCs, train users, and let them fend for themselves. The diplomatic messaging system is a network that requires daily administration. As the network expands, traffic flows grow and monitoring must be stricter, since users will be quick to complain to the network administrator in the event of a failure. While users do not necessarily realize the advantages of the system at the outset, they soon become demanding.

E-mail users soon get into the habit of browsing AFP dispatches with a few mouse clicks and sending multiple copies of a meeting notice to remote participants in a single mailing. If the system fails, it’s hard for users to return to the old ways:

1. Links between sites are handled by the Ministry network infrastructure, which is supported by:
   - permanent national links and links between Paris and regional centers (24 sites)
   - the switched telephone network
   - a satellite communication network, VSAT.
Diplomatic dispatches

Diplomatic dispatches are used to transmit the instructions of the Ministry’s central office to diplomatic and consular missions; in the other direction, they are used by ambassadors to inform the Minister of developments in their country of residence. Dispatches are encrypted for confidentiality. They are transmitted by means of a variety of communication media: dedicated links, telephone, satellite, and radio-telegraph. Secure transmission is ensured by circuit redundancy (dedicated links + telephone, radio + telephone, etc.).

Dispatch authors have a proven and consummate skill in expressing themselves concisely. Nevertheless, the mass of transmissions is enormous. Each year, more than 400,000 dispatches, totaling nearly one billion characters, are produced by the Quai d’Orsay and the diplomatic and consular missions abroad. Each dispatch has an average of five recipients, which puts the number of dispatches actually sent at five million.

Dispatch transmission poses three major problems:

- The dispatch must reach all the departments concerned (sometimes as many as several tens; for the most confidential messages, less than five). However, it must reach only those departments, and in such a manner that the sender’s superiors and the recipient’s superiors will be informed of the transmission.

- Each recipient department must be given the names of all the other recipient departments.

- Each department must be able to check that it has effectively received all the dispatches sent to it.

The first problem is solved by the management of standard lists intended for the sender’s and the recipients’ superiors: the writer of the dispatch refers to these lists. The second and third problems are solved by an automatic multiple-numbering procedure. The procedure attaches a list of recipients to each message and informs each recipient that the dispatch in question is the nth sent by the author since the start of the year.

Only duly authorized officials are allowed to sign the dispatches and, before transmission, the Encryption Department carefully checks the signer’s status and the signature’s authenticity. Until now, the checking procedure was performed on a written document presented in standardized form (the written document was also filed as proof of dispatch). The advent of internal electronic networks has led Ministry officials to examine the possibility of (1) eliminating the paper document by sending the dispatch over a secure route to the recipient’s terminal and (2) introducing electronic signatures, which would allow the holder of the signature to authenticate the document before it is transmitted over the network.

1. Stimulated by regular reminders from the Ministry’s Secretary General.

tearing off dispatches as they drop from the teletype machine, badgering their secretarial offices or waiting around the fax machine to make sure their invitations are sent on time, and redialing the number of a busy or absent party when they could have left a brief message in his or her e-mailbox.

The Ministry has therefore had to develop remote monitoring procedures and define an organization capable of taking swift remedial action to solve problems detected or reported by users.

These administrative tasks are performed at the central office by a five-person team in charge of the entire messaging and news-dispatch dissemination system. Supervision tools provide status reports on all messaging-system servers.

A general directory copied to all sites

The system also required the definition and management of a computerized directory of electronic addresses of all users. Every day, however, there are changes. New mailboxes are opened, or existing ones are assigned to new users just appointed to a new posting. The directory must be scrupulously updated and made available on workstations of all subscribers, wherever they may be.

The directory is managed by a staffer in the Paris central office, and a procedure has been developed to copy the directory to peripheral servers.

Influence on work organization

The e-mail culture is spreading slowly but surely at the Ministry. On average, it takes a year for an organization to fully assimilate the system: that’s the time it takes for the
early enthusiasts to convert their immediate circle and, by word of mouth, the entire personnel. A good illustration is provided by the CXI department,\(^2\) which operates from three locations in Paris and one in Nantes. E-mail began as a gadget on the PCs of a few computer specialists three years ago, and is now almost as indispensable as the telephone. The most obvious impact has been on the secretarial offices and the Archive and Documentation Center (CAD), where the volume of typing and recording tasks has been considerably reduced.

Within the next few years, connections will be established for all Ministry employees and sites. In addition, Internet gateways will allow interconnection with other French-government and European bodies, such as the European Union and the foreign ministries of other EU Member States.

Other likely future developments are:
- The incorporation of diplomatic messaging into more general communication systems such as the Ministry's own Intranet.\(^3\)
- A single and secure messaging system, which is bound to become one of the main channels for transmitting data and information in the Ministry.\(^4\)

Apart from its daily usefulness, the diplomatic messaging system is gently paving the way to the inescapable advent, if not of virtual diplomacy, at least of a global information society.

---

\(2\) CXI: Communication, Encryption, and Computing Department.

\(3\) The Ministry’s Sub-Directorate on Documentation has set up an Intranet task force that is compiling a list of needs and assessing experiences in other countries. The first Intranet applications will concern policy statements, general information, and the Ministry Directory.

\(4\) At present, several systems operate in parallel: diplomatic dispatches, person-to-person diplomatic messaging, and visa messaging. The goal is to incorporate these flows into a single transmission system, while preserving the specific security and priority requirements of each type of flow.

Yves Le Rolland
Communication Infrastructure and Services Division
French Foreign Ministry
China has become a topical issue for statisticians of all countries, in particular with the August 1995 meeting in Beijing of the 50th session of the International Institute of Statistics. An additional reason for French statisticians to take an interest in China is the signing in 1995 of a three-year cooperation agreement between INSEE and China’s State Statistical Bureau.

In this article, Véronique Alexandre gives an overview of statistics in China—a challenging exercise given the country’s diversity, size, and ancient history. The author deals successively with demographics, administrative organization, and the political system (including its recent changes). After this broad outline of the framework, the author describes the structure of the statistical system, its achievements, its programs, and its plans for the future.

Table 1 - Selected indicators for France and China, 1982

<table>
<thead>
<tr>
<th>Data</th>
<th>France</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crude birth rate (‰)</td>
<td>14.60</td>
<td>29.91</td>
</tr>
<tr>
<td>Crude mortality rate (‰)</td>
<td>10.0</td>
<td>6.36</td>
</tr>
<tr>
<td>Period fertility rate</td>
<td>1.9</td>
<td>2.7</td>
</tr>
<tr>
<td>Life expectancy at birth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- male</td>
<td>71 years</td>
<td>66 years</td>
</tr>
<tr>
<td>- female</td>
<td>80 years</td>
<td>69 years</td>
</tr>
<tr>
<td>Sex ratio (M:F)</td>
<td>97.2</td>
<td>106.3</td>
</tr>
<tr>
<td>Age distribution (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- under 19 years old</td>
<td>28</td>
<td>46</td>
</tr>
<tr>
<td>- over 60 years old</td>
<td>18</td>
<td>7</td>
</tr>
</tbody>
</table>

Late, spaced, few

The People’s Republic of China (PRC) has carried out the following censuses in the past half-century:
- 1953: 583 million inhabitants.
- 1964: unreliable enumeration, performed with makeshift resources.
- 1982: 1,008,175,288 inhabitants. A major survey, carried out with scientific and material aid from abroad, including 21 computers financed by the United Nations Fund for Population Activities (UNFPA), and seven million supervisors and enumerators.
- 1990: 1,133,682,501 inhabitants. This figure is underestimated because of an under-registration of births (hei haizi: undeclared children) estimated at 10% of first-borns, 37% of second-borns, and 70% of third- and later-borns.

Between 1950 and 1982, the population therefore doubled, in spite of an effective demographic transition between 1971 and 1978. Despite a single-child policy illustrated by the somewhat contradictory slogan “late, spaced, few” (wan, xi, shao), China persistently evokes the image of a gigantic population.

1. The numbers in [] brackets refer to the bibliography at the end of the article.
In addition to the estimated 10-20 million unreported births, the statistical challenge is complicated by the fact that the freedom of movement for persons has created a drifting, uncontrolled population of some 70-80 million country-dwellers seeking work in the cities. The rapid shift in the age distribution and this vast migration of rural labor—from the inland provinces to the new industrial jobs of the coastal areas—are continuously modifying the socio-economic data (table 1: some comparative statistics on France and China).

**A complex, changing organization**

Although some structures have endured for over a millennium, the political and administrative organization of China’s territory, as spelled out in article 30 of the PRC’s constitution of December 30, 1987, is fairly complex and changing.\(^3\) The four levels are as follows:

- **Level 1: sheng**
  - 22 provinces (sheng)\(^4\)
  - 5 autonomous regions (zizhiqu)\(^5\)
  - 3 cities (zhixiazhi)\(^6\) with the rank of province: Beijing, Shanghai, and Tianjin.\(^6\)

This makes a total of 30 territorial units administered by mayors, governors, and presidents as well as assemblies elected for five-year terms, flanked by committees of the Chinese Communist Party under the direct authority of the central government, i.e., the Council of State (Guowuyuan).

The present provincial divisions date from the Tang dynasty (618-907 A.D.).

- **Level 2: zhou**
  - 170 large cities (dijishi)\(^7\)
  - 117 prefectures (diqu)
  - 8 leagues (meng)\(^8\)
  - 30 autonomous departments (zizhizhou).\(^9\)

This makes a total of 326 territorial units with a more precarious status: the number of prefectures fell from 171 to 117 between 1979 and 1987, while the number of level-2 cities rose from 72 in 1965 to 104 in 1979, 143 in 1983, and 170 in 1987. This increase is due to population growth and new economic activities.

- **Level 3: xian**
  - 208 cities (xianjishi)\(^10\)
  - 1,817 districts (xian)\(^11\)
  - 51 banners (qi)\(^8\)
  - 110 autonomous districts (zizhixian)
  - 3 autonomous banners (zizhiqi)
  - 3 special zones (tequ)
  - 1 agro-industrial zone (gongnon-gqu)
  - 1 woodlands zone (linqu).

As in level 2, the number of cities rose and the number of districts fell in the 1980s. The cities and, more significantly, the districts comprise the basic units listed below.

- **Basic units: xiang**
  - 7,000 towns (zhen)
  - 50,000 rural markets (nongcunjizhen)
  - 91,000 cantons (xiang) encompassing some 5 million villages.

Not all of this framework is rigid: the number of basic and intermediate territorial units changes, sometimes even from year to year. The province is the keystone of the entire territorial administration edifice, but statistics offices operate at the first three levels and sometimes even at the basic level.

**The all-powerful danwei**

The political system that prevailed from 1949 to 1979 developed a unique culture that distinguished itself even from the reigning culture in the Soviet Union and the other socialist countries: every person and legal organization in China was integrated into a programmed system; the intermediate entities were totally eliminated, leaving the State face to face with the People (on whom Mao Zedong often relied for direct support). The Party’s absolute power is represented through a host of units called danwei or neighborhood committees.\(^12\) These omnipresent cells constitute the basic units of all social organizations.\(^13\) Each individual is formally tied for life to a danwei, which organizes his or her family path and working career. Likewise, each danwei has its assigned position in a family-tree structure of the State, according to its area of activity, its property system, and its rank in the administrative hierarchy. The specific status of each danwei in turn determines the social position of each of its members. The State exerts a monopolistic control on all the vital requirements of a danwei.
A person’s status is thus locked into a rigid social structure and, by controlling the danwei, the State penetrates into every household: the danwei is the link that connects the individual to society.

«In exchange, the danwei can offer substantial benefits [...]. And particularly now, when youth job demand exceeds supply, many parents are grateful to their danwei for providing for their children’s future. The danwei automatically allocates a job to a child in a company when the parent vacates a position on retirement. The firm sets up vocational training centers: for youths who are temporarily idle and an easy prey to delinquency; this arrangement gives them a skill and a guaranteed job in the family danwei. Another advantage is the opening of small ancillary businesses to employ young job-seekers, such as a cheap eatery set up by a leading Beijing restaurant in a nearby shack.» [4a]

The long march toward a socialist market economy

Nineteen-seventy-nine marked a turning-point in the history of contemporary China, as the nation embarked on a policy of reform and of opening to the outside world. This entailed several structural changes in Chinese society, the most important of which were:

- the introduction of foreign capital
- the diversification of crafts and industrial activities, at the discretion of local officials
- the creation of special economic zones, pilot-towns and priority development zones
- the buildup of the private property system and a robust expansion of private enterprise.

The State has therefore lost its supremacy in the national economy. Indeed, its share of output has fallen below 50%. New fringe sectors have flourished. Non-State organizations and new economic forces have

---

14. In 1992, there were 84,000 business startups with US$19.2 billion in foreign capital, including borrowings abroad.
15. Their output indicates a rate of return 2.5 times that of State enterprises or collectives.
Major changes have taken place in the dissemination of information and in communications between regions—and between China and abroad. Since the mid-1980s, China's social structure has developed into two overlapping and interlinked networks, one of them called the «inside of the system,» the other the «outside of the system.» This has created a series of problems, including:

- a confusion over concepts of property rights
- a dual price system
- an underground economy
- unreported income
- the end of the «iron rice bowl»16
- lack of a social-protection system.

The State Statistical Bureau

Chinese statistics is rooted in an ancient bureaucratic tradition [5], and in well-established registration and cataloguing practices. Fifteen centuries before our era, the Jiaguwen—inscriptions on bones and tortoise shells—were already recording statistics such as population figures. The «Office of Historiographers» was in continuous existence for centuries.17 In 110 B.C., a «Bureau of Equalization and Standardization» was established. Throughout the dynastic period, censuses were conducted at regular intervals by an office reporting to the highest level of government: the census of 2 A.D. was a model of its kind. These institutions mark the origin of Chinese statistics [6].

Between the fall of the Empire in 1911 and the proclamation of the People’s Republic in 1949, the only period of relative stability was the «Nanking decade» (1928-37), during which the Guomindang—the ruling Nationalist Party—commissioned numerous surveys and launched several planning initiatives. One of these was the establishment of the National Economic Council, which carried out socio-economic surveys. But the subsequent period of unrest, like the preceding one, greatly disrupted the continuity of statistical work.

After a fairly long gap (1937-49), notably due to the war with Japan and the civil war, the State Statistical Bureau (Guojia tongji ju) was revived in 1949 to meet planning requirements. At the time, the planning effort relied entirely on the central government and on information sent up from the lower ranks: statistics-gathering was guided more by ideology than scientific method.18

The only figures produced were those demanded by planners. Ideally, the numbers were supposed to match the announced targets, which were as follows—ranked according to their respective priority at the time:

- physical quantities in agriculture (examples in table 2) [7] and industry
- a price index (fairly stable at the time)
- size of school population (by broad educational levels)
- number of workers (by main socio-occupational category).

The State Statistical Bureau was abolished during the Cultural Revolution of 1966 and rehabilitated in 1978. It has since been modernized, given new priorities, and expanded.

---

16. Symbol of the Maoist regime that can be translated as: a job for life (meaning bed and board) guaranteed by the State.
17. Official scribes were not allowed their daily rest until they had filled about thirty kilograms (66 lbs) of wooden boards or bamboo scrolls with inscriptions.
18. The figures were made to fit planning goals rather than reality: the resulting errors of assessment had tragic consequences such as the great famine of 1958-61, which caused the death of several tens of millions of Chinese during the Great Leap Forward.

---

Table 2 - Output of selected commodities during the first two five-year plans (thousands of metric tons)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>rice</td>
<td>48,650</td>
<td>55,100</td>
<td>60,550</td>
<td>68,450</td>
<td>71,550</td>
<td>70,850</td>
<td>78,000</td>
<td>82,450</td>
<td>86,800</td>
<td>113,700</td>
</tr>
<tr>
<td>potatoes</td>
<td>9,850</td>
<td>12,400</td>
<td>14,000</td>
<td>16,350</td>
<td>16,650</td>
<td>17,000</td>
<td>18,650</td>
<td>21,850</td>
<td>21,900</td>
<td>45,400</td>
</tr>
<tr>
<td>tea</td>
<td>41</td>
<td>65</td>
<td>78.5</td>
<td>82.5</td>
<td>84.5</td>
<td>92</td>
<td>108</td>
<td>120.5</td>
<td>111.5</td>
<td>140</td>
</tr>
<tr>
<td>silk cocoons</td>
<td>31</td>
<td>33.5</td>
<td>47</td>
<td>62</td>
<td>59.5</td>
<td>65</td>
<td>67</td>
<td>72.5</td>
<td>68</td>
<td>84.5</td>
</tr>
</tbody>
</table>

Source: State Statistical Bureau [7]
China’s drive for economic development and openness from 1978 onward revitalized the Bureau, one of whose aims became economic analysis. For Chinese statisticians, the challenge lay in the excessively slow streamlining of administrative structures, the exponential growth of an informal economy, the new-found diversity of the private sector, and the increasing complexity of enterprise structures. In the 1980s, the situation improved, as the Household Expenditure Survey shows (box 1).

These changes were deemed insufficient, however, and the decision was taken to overhaul the entire system.

**Revamping the statistical system**

- China’s official statistical system is based on a four-level structure:
  - Statistics laws are drafted by the Standing Committee of the People’s National Assembly. The current statistics law was approved on December 8, 1983, by the third session of the Sixth Congress.
  - Statistics regulations are drafted and approved by the Council of State. They cover the administrative structure and programs.
  - Local statistics laws and regulations are drafted by people’s local assemblies with legislative powers or by their standing committees. Twenty-six provinces, autonomous regions, and cities have enacted local statistics laws and regulations.
  - Administrative rules in the statistical domain are drafted and approved by the State Statistical Bureau, ministries, or local governments. More than thirty ministries have adopted statistical rules for their respective sectors, and Sichuan and Shaanxi provinces have enacted local rules.

China’s present goal is to achieve the greatest possible convergence with international criteria in order to allow comparisons and qualify it for international comparison of methods.

- The four-step strategy for reforming official statistics was outlined by the Director-General of the State Statistical Bureau in August 1995 in Beijing.
  - 1978-83: Restoration of a statistical system that had collapsed during the Cultural Revolution at the central and local levels.
  - 1984-87: Transformation of the closed system of official statistics (with administrative reports for the government only) into an open system accessible to all of society (with charges for services to private-sector users).

- 1984-87: Transformation of the closed system of official statistics (with administrative reports for the government only) into an open system accessible to all of society (with charges for services to private-sector users).

**Household Expenditure Surveys**

The first income surveys date from 1952. The State Statistical Bureau had compiled a representative sample of the Chinese population, on which regular surveys were carried out until 1965 (with a break in 1958-61 during the Great Leap Forward). The sample comprised 16,000 urban households and 16,000 rural households distributed across all provinces. Statistical work underwent a further interruption from 1966 to 1977.

Since 1977, the Bureau has sought to rebuild teams of field workers and samples: the number of households rose from 3,600 in 1977 to 6,000 in 1978, 10,000 in 1980, and 16,000 in 1990. The surveys are performed by the provincial statistical offices using standardized procedures defined by the State Bureau. The households in the sample are required to keep a very precise record of their earnings and expenditures. They are visited three or four times a month. To offset the considerable paperwork involved, the families receive a monthly compensation of a few yuan (see [4b] on income surveys).

Several problems persist, however:

- the lack of some information items, for two reasons: (i) income is expressed in monetary terms, in a context of high own-account consumption in rural areas and benefits in kind or near-free provision of many expenditure items such as day-care centers, lunchrooms, health, housing, and education; (ii) no data are provided on income distribution. As an example, an official statistic of April 1980 for Beijing put the average cost of living at 36.85 yuan per person per month (at the time, one yuan was worth about FRF1), broken down as follows: 91.3% on food, clothing, and purchases of staple goods; 8.7% on rent, expenses, transportation, health care, and postage and telecommunications [8].

- shortcomings of a technical nature: samples are selected by administrative bodies, not generated by random draws; also, to save costs, the samples are fixed—in other words, the same households are surveyed for several years in a row.

---

19. An increasing number of workers engage in an informal commercial business on the side.

20. The number of field workers is equal to the population of Belgium.

21. For example, the United Nations System of National Accounts (SNA) is the benchmark for the reform of China’s national accounts.
Statistics and economic studies: cooperation between France and China

A memorandum of agreement on cooperation between the China State Statistical Bureau (SSB) and INSEE was signed on February 21, 1995, by Shao Zongming, Deputy Director-General of SSB, during his visit to France, and Paul Champsaur, Director-General of INSEE.

The three-year agreement will be financed bilaterally by France. Under its terms, INSEE will organize cooperation in three areas: (i) business registers, (ii) domestic trade statistics, and (iii) economic analysis and forecasting. Area (iii) will be handled jointly with the French Economy and Finance Ministry’s Forecasting Office (Direction de la Prévision) and Observatoire Français des Conjonctures Économiques (OFCE), a Paris-based research body.

Two goals have been defined:
- to provide Chinese statisticians with the tools they need to work in each of the selected areas;
- to suggest ways of organizing the units in charge of those areas.

Between October 1995 and February 1996, French experts undertook missions in China to prepare work programs, define specific projects, and schedule activities in each area of cooperation.

Similar arrangements were adopted in all three areas: technical missions by French experts in China and visits by Chinese experts to their French counterparts, including three-month training periods and «hands-on» internships. Missions to assess initial results were carried out in late 1996.

Business registers

Cooperation in this area focuses on the following goals:
- acquiring a knowledge of international standards and concepts concerning the relevant statistical units, in order to apply them to China;
- understanding how the French register works and how it is used for statistical purposes;
- examining the conceptual and processing difficulties encountered during the compilation of the register and in statistical surveys;
- launching pilot operations in China.

The cooperation was extended into 1997, with (i) assistance in the preparation of tools for coordinating exchanges between administrative bodies and tools for updating the register from existing administrative sources; (ii) organization of training in project-development methods.

Domestic trade statistics

Cooperation here covers the following issues:
- sampling techniques, questionnaires, and organization of surveys in the wholesale/retail trades;
- concepts, standards, and classifications used in enterprise statistics;
- conduct of enterprise surveys in France: organization, sampling, survey-launch techniques, quality control, estimation methods, etc.;
- obtaining survey results and using these in national accounting.

Economic analysis and forecasting

Cooperation in this area is directed toward:
- short-term analysis: quantitative and qualitative surveys of businesses and households; quarterly national accounts;
- short-term forecasts (current year and following year), based on an aggregated annual econometric model that explains not only the value and volume changes in GDP and its components, but also prices and wages, and employment (classified into two sectors: primary and other). As quarterly series become available, it may become possible to construct a quarterly model, relying on the experience acquired with the annual model;
- medium- and long-term forecasts: a detailed input-output model of the Chinese economy is used for medium/long-range forecasting. The cooperation program will compare two types of model: a structural model that gives an average forecast without seeking to describe cycles, and a dynamic, more aggregated model.

Current and recent projects

- Work is proceeding in three priority areas:

  1. Regulations, legislation, and control systems; a major effort is being undertaken here. The following developments occurred in 1995:
     - revision of the statistics law
     - procedures for controlling the enforcement of laws and regulations, with the formation of a corps of 20,000 inspectors: four national inspections already took place in 1985, 1987, 1989, and 1994, involving millions of people.

22. The 1994 inspection found 70,000 breaches of the law, 8,000 of them serious. The provinces are now in charge of these inspections, held at a pace of one or two a year.
- the launching of advertising campaigns on the statistics law: all media are being used to motivate survey respondents, whose weariness and distrust are making data-gathering increasingly difficult.

2. New system of surveys; its implementation began in 1994, in step with the expansion of the market economy. The system is based on (i) censuses at regular intervals, covering the population, industry, agriculture, services, and local units; (ii) standard surveys on urban and rural households, prices, construction, transportation, etc. The overall aim is to increase the reliability of indicators, particularly in the macroeconomic sphere.

3. Accelerated modernization of resources and methods through the introduction of computer processing and training of Chinese statisticians. The present demand for statistical data require theoretical as well as methodological advances, and Chinese statisticians need to become familiar with a wide array of new techniques. The oldest statisticians were trained in the days of central planning to serve as mere operatives—the analysis and interpretation of data being the prerogative of the highest-ranking officials. The intermediate generation received no training at all, and the young generation needs to acquire totally different skills. This situation represents a break from the traditional model in which knowledge is transmitted—with steady increments—from one generation to the next.

- To meet these goals, China has appealed for cooperation to the top statistical institutes abroad, in particular those of Canada, Australia, Sweden, and France. Notable recent achievements include:
  - A new national accounting system, first discussed in 1985 and implemented in 1995: it distinguishes tangible production from intangible production, which was previously disregarded. Domestic consumption now includes government consumption and collective consumption. The new system tabulates the accounts in input-output form by institutional sector, with an accounting of financial flows. Today, China calculates its GDP in the same way as France, using the three bases of expenditure, income, and production. But China also needs national accounting at the provincial and district level.
  - A third industry census, launched in 1995: the previous one dates from 1985, but the number of firms has since doubled to about 10 million.

In China, the last word is always a proverb. Here, we can say: «On Earth, nothing is impossible; only fear the lack of perseverance.»

### References

[4] Aujourd’hui la Chine, no. 27, 1st quarter 1983, articles by:
  [4a] Lise Fontaine Jacob
  [4b] Philippe Aguinier.